Species

Newsletter of the Species Survival Commission
IUCN—The World Conservation Union
Number 33, Spring 2000

Species is the newsletter of the Species Survival Commission of IUCN—The World Conservation Union. Commission members, in addition to providing leadership for conservation efforts for specific plant and animal groups, contribute technical and scientific counsel to biodiversity conservation projects throughout the world. Commission members also serve as resources to governments, international conventions, and conservation organizations.

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SPECIES SURVIVAL COMMISSION

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Contents

The SSC—Operations and Plans

From the Chairman

This is the last issue of *Species* before the Second IUCN World Conservation Congress, and you will find here an invitation to attend both the general meeting of the Species Survival Commission, and the Congress itself. I urge you to give serious consideration to these invitations, and to come to Amman, Jordan to participate in what promises to be an exciting set of meetings.

This past month marked a major milestone in the development of the Red List Program, one of the flagships of the SSC. As Chair, I was able to write to a wide range of Specialist Group Chairs inviting them to take up an appointment as a Red List Authority. With the appointment of Red List Authorities, we are taking the next step to improving the *IUCN Red List of Threatened Species* as the most respected source of authoritative advice on the global conservation status of wild species. The establishment of such Authorities is also a necessary step to the creation of an effective appeal process for the Red List Program, and further buttresses its credibility. In this issue you will find an article from the IUCN/SSC Red List Program further describing the process leading towards the *Red List 2000* (page 22).

The credibility of advice from the SSC underlies another of our important activities. As I write this message in early December, the Wildlife Trade program is now fully immersed in preparations for the next meeting of the Conference of the Parties to CITES. Chief among those preparations is the development of the next edition of the *Analyses of Proposals to Ammend the CITES Appendices*. Once again, I expect the *Analyses* to provide a solid basis for decision-making by the Parties at the meeting in Nairobi, Kenya in April 2000. As such, the *Analyses* will be dedicated to ensuring the Parties have easy access to the best available information on conservation status and threats, and the best available and credible information on trade, with respect to CITES proposals. Working together with TRAFFIC and with the support of several generous donors and a contribution from the CITES Trust Fund itself, we expect to deliver the *Analyses* to Parties well in advance of the meeting, for maximum effectiveness.

The SSC is also playing an increasingly visible and important role in support of the Convention on Biological Diversity (CBD). The Invasive Species Specialist Group recently completed the long-awaited *IUCN Guidelines for the Prevention of Biodiversity loss caused by Alien Invasive Species* and these were submitted to the January 2000 meeting of the Subsidiary Body on Scientific, Technical, and Technological Advice (SBSTTA) as a major contribution to the debate on the effects of invasive species. The Sustainable Use Specialist Group and its Global Support Team played an important role in shaping the debate in SBSTTA regarding the concept of sustainable use of wild species. Of particular interest is a submission that begins to draw the linkages between the principles of an ecosystem approach to conservation with the principles of sustainable use.

I believe the engagement of the SSC in such conventions is an important role for the Commission. The Commission acts as a credible, independent source of scientific information. Another example is the advice numerous Specialist Groups have been able to provide in support of Agreements developed by the Convention on Migratory Species. One of the strengths of our volunteer network is our ability to distribute current, relevant conservation information and management recommendations to the parties to conventions.

Finally, I would draw your attention to the continuing development of the Species Information Service (SIS). I continue to believe that the effective implementation of the SSC Species Information Service, with the full and enthusiastic support of all of our Specialist Groups, will be an absolute necessity if the SSC is to continue to play an important role in bringing our advice and experience to bear in the solution of global and local conservation problems. The field of biological information networks has become crowded in the past couple of years. The technology is evolving quickly, but consensus on standards is not keeping pace. Nor do we have all of the answers with respect to such important matters as safeguarding Intellectual Property Rights and the custodianship of data. As the development of SIS continues, we are conscious of the need to ensure that you, as a member of SSC, feel confident in knowing the data you contribute is used to achieve important synergies, while still clearly maintained under your control and the SSC custodianship. I am constantly amazed, and encouraged, by the breadth and depth of knowledge available through this very special network in which we all participate. We must do our best to put a functional SIS in place so we can make the best use of that knowledge.

As we enter the final few months of this IUCN triennium, we can all look back on a record of significant achievement by the Species Survival Commission. We have developed a strong vision of the future course for the Commission through the strategic planning process, and used that vision to influence the program planning process of the IUCN as a whole. The next issue of *Species* will be released at the Second World Conservation Congress, and I hope every Specialist Group will take the opportunity to provide a short report of its activities over the triennium. I look forward to meeting as many of you as possible in Jordan.

David Brackett

SSC Office Report

This report covers the second half of 1999, another busy and productive period in the work of the SSC Secretariat. This report covers only the general highlights. There have been numerous other SSC activities, especially in the individual Specialist Groups, that continue to impress us, but which time and space do not permit us to mention here. We do encourage more Specialist Groups to provide regular reports in *Species*. The rest of the Commission needs to learn of your good work!

Strategic Planning

SSC's strategic planning process continues. The work that was completed at the Djerba workshop in March 1999 has been refined at subsequent meetings and now we have four key objectives. These have been sent out to Specialist Group Chairs to review. More information is provided in a special article in this issue of *Species*. We are now in the process of working on the more specific results and activities related to these objectives and a final workshop is planned for March 2000. In the meantime, the IUCN planning process has benefited from the hard work of the SSC community. The SSC goal has been adopted as an overall IUCN goal, making it much more clear that the work of the SSC an integral part of what IUCN does.

For more information on the strategic plan, see http://iucn.org/themes/ssc/memonly/stpl2000.htm

Species Information Service (SIS)

The second trial (or beta) version of the SIS software is currently being tested by several Specialist Groups. Intensive testing will be done by the Primate, Mollusc, Lagomorph, Antelope, Marine Turtle, Orchid, and Mediterranean Island Plant Specialist Groups. These were selected to ensure a wide range of species and data complexity in order to ensure that the system will be able to accommodate the data management needs of the entire SSC network. Other Specialist Groups are also being given the opportunity to contribute.

Version 1.0, the final and full working version, is expected to be fully developed by September 2000 with the goal of presenting and officially launching it at the Second IUCN World Conservation Congress. Version 1.0 will be distributed to all SSC Specialist Groups and significant other relevant partners in the SSC network. With this distribution, implementation of the Species Information Service will start. It is anticipated that SIS full implementation will phase in over a period of several years.

In support of the SIS, various fund-raising initiatives have been developed. Thus far we have been successful in obtaining support from the US State Department (through their annual voluntary contribution to IUCN), the Packard Foundation, the Margot Marsh Biodiversity Foundation, and the Norcross Wildlife Foundation, as well as from one anonymous donor.

More information is available at http://iucn.org/themes/ssc/programs/sis.htm

Red List Program

Craig Hilton Taylor, our Red List Officer, has been very busy coordinating the Red List Criteria Review and the National/Regional Red List Guidelines process. The Criteria Review process was reported on at length in the last issue of *Species*. This process began with a scoping workshop in March 1998 and is now nearing completion. One final workshop, dealing with Criterion B, will be held in Sweden in January 2000. It is expected that the revised criteria will be adopted during the course of the year 2000.

Several workshops have been held to begin the process of refining national/regional guidelines. Workshops were held in Spain and Sri Lanka in September, and in South Africa in November. Future workshop locations include Costa Rica, Kenya, and China. These workshops are providing training in the use of the Red List criteria, as well giving the opportunity to develop the national/regional guidelines further.

Craig has also been busy working on *1999 IUCN Red List* and on the *2000 IUCN Red List.* The former, which will be amalgamating the trees list and the animals list, will appear on SSC's Web site in early 2000. This list will also include some other updates, and will be the first time that both animals and plants have been compiled together.

The 2000 list will be a more substantial update. In November, David Brackett sent out a series of letters to Specialist Groups and to some organizations that collaborate closely with SSC, designating them as formal Red List Authorities (RLAs). This is part of the procedure to make the Red Listing process more transparent, and to harmonize the approaches and standards used by different assessors. In future, changes to the Red List can only be done by the RLAs, or by the Standards Working Group that oversees the whole process. Another new development is that future changes to the *IUCN Red List* will be required to be much more fully documented than has historically been the case. A set of documentation standards has been circulated to the RLAs. This does mean that the process of Red Listing is becoming more time-consuming, but the final product will certainly be much more useful. However, to assist the RLAs with this increased workload, some new software (called RAMAS® Red List) that has been developed by Applied Biomathematics in New York, is being made available.

One final development is that a petitions process has been established, whereby challenges can be made to existing listings on the *IUCN Red List.* Further details of this petitions process are given in this issue of *Species*. To assist Craig with this very heavy workload, Caroline Pollock has joined the team in Cambridge as an intern assigned to preparation of the *IUCN Red List 2000.*

For more information on the Red List Program, see http://iucn.org/themes/ssc/redlists/rlindex.htm

Plants Program

The International Botanical Congress was held in St. Louis in August 1999, and included the launch of the draft SSC Plant Conservation Program as both an SSC 50th anniversary item and a "new millennium" initiative. The Plant Conservation Program was formally endorsed in a resolution by the 6,000 botanists attending the Congress. In addition, the SSC gave the Peter Scott Award for Conservation Merit to Dr. Tony Cunningham, a well-known ethnobotanist and SSC member, for his outstanding commitment to plant conservation.

The Plant Conservation Subcommittee (PCS) met in the Ozark mountains in the US in August 1999. The Plant Conservation Program was the main topic of discussion and enthusiastic participation resulted in an ambitious document. PCS members are now working on the difficult process of prioritization.

In the meantime, we are happy to announce the imminent recruitment of a new Plants Officer to be based in Cambridge, UK. This position is being supported as a secondment funded by the Royal Botanic Gardens Kew and Scottish Natural Heritage. We hope to have our candidate in place in early 2000.

For more information on the Plant Conservation Program, see http://wwwcjb.unige.ch/BVAUICN/BPLANTS.HTM

Wildlife Trade Program

In October, the Wildlife Trade Program held a second workshop to develop guidelines for CITES Scientific Authorities on the making of non-detriment findings. The workshop participants finalized the guidelines and agreed to a tabular format for making findings for both plants and animals. The CITES Secretariat plans to make use of these guidelines in an upcoming training workshop for CITES implementing agencies.

SSC continues to contribute to the development of the system for Monitoring the Illegal Killing of Elephants (MIKE), as mandated by the CITES Parties in Harare at the last CITES Conference of the Parties. For the past six months we have coordinated the pilot phase implementation in both Central Africa (undertaken by the Wildlife Conservation Society) and in Southeast Asia, and developed data protocols and training modules.

In April, with funding from the UK Government's Darwin Initiative, a project in Togo started to assess the status of seven CITES-listed species of reptiles and to train counter-

parts in assessment techniques. The project brings together representatives from a local university, the wildlife department, and reptile breeders and traders. The Project Officer ran a course on basic reptile taxonomy, identification, ecology, and population assessment methods, and field activities are now underway.

The European Commission and a CITES-funded project on chameleons in Madagascar, in collaboration with university and wildlife department staff from Madagascar and another Darwin Initiative project, has produced some of the first density estimates for a range of rain forest chameleon species. The project report details a new rapid assessment technique for collecting population density information; previously only inventory studies have been published on these species. A second CITES-related project to assess the status of two parrot species in Madagascar has just completed field work, and results are expected in the year 2000.

We cannot forget that the next CITES Conference of the Parties will be held in Nairobi in April and that means that the Wildlife Trade Program team is very busy completing the *Analyses of Proposals to Amend the CITES Appendices*. This is a gargantuan job that must be completed by 14 February, and has been funded by the CITES Trust Fund, the European Commission (DGXI), and the governments of Australia, Germany, Japan, the Netherlands, and Switzerland. To help with the workload in Cambridge, we welcome a new intern, Neville Ash, who will surely be tired of CITES by May! We are working closely with our partners at TRAFFIC and look to the SSC network to provide the Parties with the most accurate and up-to-date information on the species covered in the proposals.

For more information on the Wildlife Trade Program, see http://iucn.org/themes/ssc/programs/trade.htm

Policy Advice and Conservation Guidelines

One of SSC's strengths is the ability of the volunteer network to gather information and use it to create policy statements and guidelines. Many of these are available on the SSC web site at http://iucn.org/themes/ssc/pubs/policy/index.htm.

- **Draft IUCN Guidelines for the Placement of Confiscated Live Animals**—Led primarily by the Reintroduction Specialist Group, these guidelines were circulated for review to all IUCN Members in the spring of 1999. The guidelines include a decision-tree to identify the most appropriate method for dealing with confiscated species, on a case-by-case basis. We hope to be able to finalize these guidelines by the end of 1999 and submit them for adoption by the IUCN Council in February 2000.
- **Draft IUCN Guidelines for the Prevention of Biodiversity Loss due to Biological Invasions**—Draft versions and revisions of these guidelines have been circulating since the First World Conservation Congress in 1996. Following a planning meeting for the IUCN Global Initiative on Invasive Species in April 1998, the Invasive Species Specialist Group decided to compile a clearer, more concise version. This has been reviewed by all IUCN Members and has been submitted, as we go to press, for adoption by IUCN Council.
- **Draft IUCN Policy Statement on Sustainable Use of Wild Living Resources**—Developed by SSC's Sustainable Use network with input from IUCN Members, this policy statement is intended to be a brief, concise document which defines the Union's over-arching position on sustainable use. It was not conceived as a detailed elaboration of how to undertake sustainable use activities, and the target audience is the Union's Secretariat and its Members. The third draft of the statement has been circulated to IUCN Members for a final round of comments. It will be finalized and presented at the Second World Conservation Congress in October.
- **SSC Publications, including Action Plans for the Conservation of Species**—SSC's volunteers continue to put a significant amount of effort into the creation of Action Plans. SSC's 50th Action Plan was completed in 1999, and many Specialist Groups contributed to the conservation community by creating Action Plans and Occasional Papers. Two interns, Anna Knee and David

Beamont, joined us in the late summer to help bring Action Plans to the publication stage. Those published, in press, or nearing completion as *Species* goes to press include:

Action Plans:

- *Conifers: Status Survey and Conservation Action Plan.* Compiled by Aljos Farjon and Chris Page. (published)
- *West Indian Iguana: Status Survey and Conservation Action Plan.* Compiled and edited by Allison Alberts. (in press)
- *Parrots: Status Survey and Conservation Action Plan.* Edited by Noel Snyder, Philip McGowan, James Gilardi, and Alejandro Grajal. (in press)
- *African Rhino: Status Survey and Conservation Action Plan.* Compiled by Richard Emslie and Martin Brooks. (in press)
- *Mosses, Liverworts, and Hornworts: Status Survey and Conservation Action Plan for Bryophytes.* Compiled by Tomas Hallingbäck and Nick Hodgetts. (in advanced stage of preparation)
- *Curassows, Guans and Chachalacas: Status Survey and Conservation Action Plan for Cracids (1999-2003).* Compiled by Stuart D. Strahl and Daniel M. Brooks. (in advanced stage of preparation)

Occasional Papers:

- *African Antelope Database 1998.* Compiled by Rod East. (published)
- *African Elephant Database 1998.* Compiled by Richard Barnes, Colin Craig, Holly Dublin, Greg Overton, Willy Simons, and Chris Thouless (in press)
- *Biology and Conservation of Freshwater Cetaceans in Asia.* Compiled by Randall Reeves. (in advanced stage of preparation)

Linette Humphrey represents SSC on the IUCN Publications Task Force which, in light of advances in electronic publishing opportunities, is reviewing the IUCN publications strategy and developing guidelines for all IUCN programs. As SSC has one of the largest and longest-running publishing programs in IUCN, it will make a valuable contribution to this process.

Further information on SSC publications can be found on http://iucn.org/themes/ssc/pubs/pubs-int.htm

Creating the World Conservation Digital Library

We await the release of a prototype version of the World Conservation Digital Library late in 1999, in celebration of SSC's 50th Anniversary year. The prototype will include the 50 Action Plans and 20 Occasional Papers that the volunteers of SSC have created over the years, together with other SSC and IUCN documents that have been published in a digital format in 1999. It will also include meta-data (extensive bibliographic detail) on all of IUCN's publications. Future versions of the Digital Library will include publications from other IUCN Programs, Commissions, and Regional and Country Offices, building up the Digital Library over time.

Secretariat News

The Chair's office reluctantly bade farewell to Ruth Barreto who has moved to the IUCN Sustainable Use Initiative office in Washington DC. However, we have been fortunate to recruit Carolina Caceres as the new Special Assistant to the Chair and hope that she enjoys the hectic times ahead for the SSC—from the CITES and CBD Conferences, to organizing the Commission activities for the Second World Conservation Congress in Amman.

At IUCN headquarters in Gland we also said good-bye to Clotilde Mack, our finance officer for the last five years, who is planning a happy "retirement" at home with her family. In her place, we welcome Isabelle Croset to the SSC team in Switzerland.

Carolina Caceres, Mariano Gimenez-Dixon, Linette Humphrey, Sue Mainka, Wendy Strahm, and Simon Stuart

The Second IUCN World Conservation Congress, Amman, Jordan, 4-11 October, 2000

Dear SSC Member:

The Second IUCN World Conservation Congress, the senior governing body of IUCN–The World Conservation Union, will be held in Amman, Jordan, 4-11 October, 2000. As Chair of the SSC, I invite all SSC members to attend the SSC Commission meeting and the Congress itself. The World Conservation Congress brings together conservation experts to discuss and make decisions that influence the global conservation agenda. As a member of the Species Survival Commission, your contribution to this process is significant. Together, we can continue to strive towards our stated vision: *A world that values and conserves present levels of biodiversity, within species, between species and of ecosystems.*

IUCN has a long history of holding triennial General Assemblies at which members set out the direction of the Union's global program for the next triennium. However, in 1992, at the General Assembly in Buenos Aires, it was decided that future assemblies should be open to a wider audience. The First World Conservation Congress was held in Montreal in October 1996. The Congress acts as a forum for discussion of global conservation issues. Through the Congress, IUCN generates excitement, commitment, and action towards achieving the Union's mission.

The Congress has become a major opportunity for sharing information and experiences among the members of the Union, its Commission members, and the general public. Voting members of the IUCN are invited to contribute to the development of the Triennial Program, and to submit policy motions for consideration. Through this instrument, the membership has significant input into the governance, policy, and program of IUCN. Members can define the Union's policy, bring their influence to bear on conservation problems, and gain Union endorsement on policies important in their country or region. Members also have the duty of electing the Officers of IUCN, including the President, Regional Councillors, and Commission Chairs.

At the First World Conservation Congress, for the first time workshops and special events were open to a more general audience. It was a tremendous success and the forthcoming Congress will provide another opportunity for general discussions. A series of interactive sessions are currently planned for the second and fourth days of the Congress (see the provisional Agenda on page 12). Each day will have six workshops following the theme "Ecospace" (day two) or "Ecospace in Action" (day four). Descriptions of the proposed workshops are found in the Congress newsletter, *Swansan* posted at the Congress Web site:http://iucn.org/amman/index.html.

The Species Survival Commission is partnering with the Society for Conservation Biology to deliver an interactive session titled, Integrating Conservation Science into Policy and Management. We hope to use this forum to address the questions, "How can IUCN maintain effective links with the conservation science base?" and "How does better science lead to better management of ecospaces?" During the session, discussions between conservation scientists, practitioners, decision makers, and other interested Congress participants will focus on how to incorporate the fast developing science base of conservation theory and practice into conservation policy.

The SSC Commission-wide meeting will be held on Tuesday and Wednesday, 3-4 October, 2000. This meeting will be open to all SSC members and to interested IUCN Members. The theme of the SSC meeting is, "Mobilizing Scientists to Address Conservation." There is a fee of US $150 to attend the Congress, reduced to US $100 if paid before 31 May, 2000. Commission members who do not plan to attend the Congress but wish to attend the

SSC meeting will be asked to pay a modest registration fee of US $25.

The first session of the SSC Commission meeting will be an open Steering Committee meeting, followed by Specialist Group reports. This will be an opportunity to highlight our achievements during the four years since the First World Conservation Congress, including the new SSC Strategic Plan. The SSC mandate to be presented at Congress is based on the results of the SSC Strategic Planning process. The goals and objectives will be presented to Congress as SSC priorities for the next triennium.

This meeting will also offer the opportunity to showcase some of the products the SSC has been developing. The *2000 IUCN Red List* will be featured, as will the newly developed Species Information Service software. We also hope to host a workshop introducing some of the issues that will be treated more intensively in the interactive Congress session, "Integrating Conservation Science into Policy and Management."

During the Congress, the SSC will present the Peter Scott Award for Conservation Merit. The award is given in the name of the late Sir Peter Scott, in recognition of commitment to global conservation and to IUCN and SSC. It is presented to individuals, communities, institutions, or organizations who have demonstrated a significant dedication to conservation science and the preservation of biological diversity.

Please note that the Species Survival Commission itself is not able to provide funding assistance for anyone wishing to attend the Second IUCN World Congress or the SSC meeting at Amman. Assistance is likely to be available for members from developing countries planning to attend the Congress as part of the delegation of an IUCN Member organization.

In this issue of *Species*, you will find a copy of the letter of Invitation to the Congress sent by the IUCN Director General, which my office forwarded to SSC members in a mailing in December. I trust you have had a chance to see it and respond. If you have not received this invitation and wish to participate in the Congress, or if you intend to attend the SSC meeting, please fax the enclosed "Intent to Participate" form to the address given as soon as possible.

I hope you will be able to join us in Amman.

Sincerely,

David Brackett

Invitation to the Second IUCN World Conservation Congress, Amman, Jordan, 4-11 October, 2000

November 1999

Dear SSC Commission Member:

The Hashemite Kingdom of Jordan has graciously offered to host the Second World Conservation Congress of The World Conservation Union–IUCN from 4 to 11 October 2000. It gives me great pleasure to invite you to join us in Amman for this event as an Observer without voting rights.

The Amman Congress is expected to be the biggest conservation gathering ever to be held in the Middle East, and the largest international environmental gathering of the Year 2000. Over two thousand participants representing IUCN's global membership of State and non-governmental organizations as well as its Commissions are expected.

Beyond the statutory function of the Amman Congress, it will also serve to highlight key challenges at the outset of the new millennium. Its theme will be "Ecospace"—the need to focus on spatial integration at various geographical scales as a prerequisite for meaningful conservation, sustainable development, and security. For example, we want to focus on shared riverbasins, regional seas, mountain environments or rain forests around the world. While emphasizing the spatial dimensions of ecosystem conservation, we will seek to build on IUCN's traditional strengths in species and protected areas. Species extinction, as well as the degradation of water and soil resources, are our most pressing challenges. We hope that greater spatial integration of conservation efforts beyond customary administrative and political boundaries can add hope for the preservation of ecosystems.

We welcome your views and invite you to take an active part in the series of interactive "Ecospace" sessions on days 2 and 4 of the Event. These Sessions are being designed to reflect the interests of IUCN members in the development of the Program that will guide the Union in the coming triennium.

The World Conservation Union - IUCN

We would also like to draw your attention to the Opening Ceremony in the presence of H.M. King Abdullah and IUCN's cherished Patron, H.M. Queen Noor. This Grand Opening will be held on the evening of 4 October in the impressive Roman Theatre, built 138-161 A.D. and located in downtown Amman.

An overview of the main elements of the Congress and a timetable outlining the program for the eight days is attached.

In addition to delegates from IUCN member organizations and members of IUCN Commissions, we are extending invitations to some non-members. Other networks and Advisory Groups are being invited to attend the Amman Congress as observers, together with representatives from IUCN partner organizations, the United Nations family, other key international organizations concerned with conservation and sustainable development, the multilateral and bilateral development assistance community and representatives of the environment-conscious business community.

Please feel free to consult the Amman Congress website at http://www.iucn.org/amman/index.html where current information and documentation has been posted and will be updated on a regular basis.

If you are planning to come to the Congress and/or the Commission meeting, *please return the enclosed 'Intention to Attend' form to us by 31 January 2000.* This will ensure that we include your name on our mailing list for further information on both meetings. We will also send you an official Registration Brochure, documentation on the Royal Hashemite Kingdom of Jordan and logistical information (travel, hotel accommodation, excursions, etc). This information will be mailed within one month to all those who indicate their intention to attend by returning this form. We would like to stress the importance of pre-registering for the Congress.

In order to help your planning, please note that neither IUCN nor the Commission is able to allocate any financial assistance to support the participation of observers in the Amman Congress.

We look forward to seeing you in Amman next October.

Yours sincerely,

Maritta R. von Bieberstein Koch-Weser
IUCN Director General

The Amman Congress will include the following five main events:

- ***Meetings of IUCN's six Commissions, to be held on 4 October.*** **Commissions will discuss their mandates and future work.**
- ***A series of Members' Business Sessions, to be held on 6, 10 and 11 October.*** **This will deal specifically with IUCN business matters, including the election of the President, Treasurer, Regional Councillors and Commission Chairs, membership issues, program and budget.**
- ***A Technical Meeting, to be held on 9 October.*** **This session will provide an opportunity for Members to informally discuss the Commission Reviews, the Membership Policy and the Triennial Program and budget.**
- ***A series of Interactive Sessions, held over two and a half days on 5 and 7 October, as well as the morning of the 9th.*** **This will include participatory sessions under the overall theme of Ecospace.**
- ***An Exhibition*** **which is being organized by the Host Country.**

We are contemplating possible additional side events, about which we will inform you at a more advanced stage.

Finally, we are planning to allocate one day, 8 October, for excursions that will be organized to several of Jordan's historic and scenic locations.

Intention to Attend and Request for Registration Information
Second World Conservation Congress, Amman, Jordan, 4-11 October, 2000

Please complete using capital letters.

Surname:

_____

_____

First name(s):

_____

_____

Name of organization:

_____

_____

Mailing address:

_____

_____

_____

_____

_____

_____

❑ I intend to participate in the World Conservation Congress as an observer.

Please note all Congress participants will be required to pay a registration fee of US $150. However, if you register and pay before 31 May, 2000, the registration fee will be only US $100.

Please send further information and documents in:

_____ French _____ English

_____ Spanish _____ Arabic

❑ I intend to participate in the meeting of the **Species Survival Commission** which will take place on Tuesday and Wednesday, 3-4 October, 2000, prior to the World Conservation Congress.

Please photocopy and fax this form by 31 January, 2000 to:
World Conservation Congress Officer
IUCN
Rue Mauverney 28
1196 Gland
Switzerland
Fax: 41 22 999 0020

Provisional Agenda *(subject to ongoing discussion)*
Second World Conservation Congress, Amman, Jordan, 4-11 October, 2000

Day 1—Wednesday, 04 October

Morning: 09h00-12h00
Commission meetings
Lunchtime: 12h00-14h00
Commission awards presentation
Afternoon: 14h00-17h00
Commission meetings
16h00
Informal members' session
Members' business session
Evening: 19h00-22h00
Members' business session
(Opening ceremony)

Day 2—Thursday, 05 October

Morning: 09h00-12h00
Interactive sessions
Lunchtime: 12h00-14h00
Candidate's presentation
Afternoon: 14h00-17h00
Interactive sessions
Late afternoon: 17h00-19h00
Candidate's presentation
Evening: 19h00-22h00
(Available for regional members meetings)

Day 3—Friday, 06 October

Morning: 09h00-12h00
Members' business session
Afternoon: 14h00-17h00
Members' business session
Late afternoon: 17h00-19h00
Members' business session
Evening: 19h00-22h00
Candidate's presentation

Day 4—Saturday, 07 October

Morning: 09h00-12h00
Interactive sessions
Lunchtime: 12h00-14h00
Members' business session (elections)
Afternoon: 14h00-17h00
Interactive sessions
Late afternoon: 17h00-19h00
Members' business session

Day 5—Sunday, 08 October

Early morning: 07h00
Excursion

Day 6—Monday, 09 October

Morning: 09h00-12h00
Results of interactive sessions
Lunchtime: 12h00-14h00
Members business session
(results of elections)
Afternoon: 14h00-17h00
Technical discussions
Late afternoon: 17h00-19h00
Reuters award
Evening: 19h00-22h00
Host country evening

Day 7—Tuesday, 10 October

Morning: 09h00-12h00
Members' business session
Afternoon: 14h00-17h00
Members' business session
Late afternoon: 17h00-19h00
Members' business session (resolutions)

Day 8—Wednesday, 11 October

Morning: 09h00-12h00
Members' business session
Afternoon: 14h00-17h00
Members' business session
(closing ceremonies)

News

The Status and Conservation of Argali in Mongolia

The argali, a wild sheep characteristic of the Mongolian fauna, was state-protected as early as 1953. In 1987 the argali was included in the Red Data Book as a species with a declining population and range. During the last five years, with the advent of massive privatization of domestic livestock, the destruction of argali habitat took place, aggravated by poaching (the hides and horns of argali are widely sold abroad) and the ousting of the animals from their ranges by domestic livestock. With the decline in habitats that could meet their ecological requirements, argali populations have decreased in certain regions. Because it is difficult to census a vast area, the number of argali dwelling in Mongolia has not been determined recently. According to the Institute of General and Experimental Biology, in the 1970s there were about 40,000 argali in Mongolia. Dulamtseren (1992) found that argali's range occupies approximately 264,000 km^2. We counted argali in 1993 in the high mountains of Altai. Over two weeks of walking and horseback censuses we recorded 85 individuals per 176 km^2 of land, of which number 41.18% were males, 50.59% females, and 8.23% young animals. On the average, the herds consisted of 8.7 individuals. According to our own data, scanty literature sources, and also the data of numerous organizations, specialists and local residents that were interviewed by us in different parts of the range, the total numbers of argali in Mongolia to date can be estimated at no more than 20,000. But during the last two years the range of argali expanded eastward and is increasing.

Since the 1960s, sports hunting has become a popular development in Mongolia. Seven hunting tourist stations (*otogs*) were established to hunt argali and other mountain ungulate species in the region. There are currently ten hunting firms in Mongolia, but the oldest one is the tourist firm "Zhuulchin," which states that long-term selective harvests to obtain argali horns for international trophy exhibitions have sharply declined the number of argali males with horns in excess of 56 inches.

The hunting pressure combined with intensive competition with domestic livestock has been responsible for a decline in the population and the decrease in the overall range of argali in Mongolia. Conservation of the argali as an exceptionally valuable species is very important. ◆ *Contributed by A. Lushchekina and S. Dulamtseren.*

Conservation Problems of the Mongolian Saiga (*Saiga tatarica mongolica*)

The Mongolian saiga is an endangered subspecies and one of the several ungulates included in the *Red Data Book of Mongolia* (1987). At the 9th Conference of the Parties of CITES (USA, November 1994) the Mongolian saiga was added to Appendix II of CITES. The Mongolian saiga's present condition is a matter of concern.

During last five years, due to recent political and economic changes, the Mongolian saiga's situation has become critical. A sharp increase in illegal hunting and smuggling saiga horns, competition with livestock, mass mortality under unfavorable ecological factors, and the absence of special protected areas are important factors in this decline. Only two isolated populations remain: in Shargin Gobi/Gobi-Altai aimag/(area about 2000 km^2), and in Mankhan district /Hovd aimag/(200 km^2). The abundance of the Mongolian saiga is subject to significant fluctuations from year to year—from 300 to 1,700 animals.

In August 1997 we conducted a survey on conservation status and biology of the Mongolian saiga sponsored by Fauna and Flora International and C.I.C. In total, we covered around 9,000 km via transects. For direct saiga counts we covered 1,213 km in parallel transects (2 km wide) that have been made off roads. We made our observations in two known parts of the saiga's range—around Sharg somon (813 km) and near Mankhan somon (400 km). We have seen 607 saigas in Shargin Gobi (0.7 animal per 1 km) and only two

saigas near Mankhan somon. We discovered a new expansion of the range to the North from Shargin Gobi, but its permanence will require additional monitoring. In total on our transects there were 97 points with a maximum number of 40 animals in one herd and an average number of 6.2 animals per herd.

The highest concentration of saigas during this period was found in the petrophyte feather grass-saltwort and saltwort-feather grass steppes on gravel and stony brown soil in intermountane hollows and on the lower slopes of the Mongolian and Gobi Altai ranges. According to information obtained from local administrations during recent decades the region of the Shargin Gobi has been used as a pasture for domestic animals (mostly sheep) but on a moderate scale. But now we observed here a considerable increase in the numbers of sheep. Competition on pastures with domestic animals could be a factor negatively impacting future survival of saigas. Another factor affecting saiga abundance is the higher mortality of males due to illegal hunting and the high mortality of young animals from predators (wolves, foxes, eagles) and parasites. We have seen a golden eagle attack and kill a young saiga, and we collected many different specimens for laboratory studies on parasites.

With an account of the anthropogenic pressures on isolated saiga populations, we conclude that it is necessary to set up a protected reserve with sufficient number of rangers and scientific staff in the Shargin Gobi as soon as possible. ◆ *Contributed by A. Lushchekina, L. Amgalan, and V. Neronov.*

Species Information Service: Brief Update of Activities

This report is an update of progress in development of the SSC Species Information Service (SIS). Since planning for SIS began in 1994, the planning team has provided periodic updates in *Species*. We are happy to report that the system design will be completed in 2000. A formal launch is planned at the Second World Conservation Congress.

SIS Design

SIS design has advanced considerably since our last report. The overall system design comprises three elements: software, a data custodian model, and a central service unit. The software will be used by SSC Specialist Groups and IUCN Red List Authorities (in those instances where they are not the same entity), allowing them to collect and organize their data in a standardized form. A Red List module is included within the software, which will assist Specialist Groups with their Red Listing responsibilities. Data will be managed in the context of a distributed data custodian model, with an aim to manage data as close to the source as possible, and capture the most current information available. In most cases the data custodian will be the Specialist Group. The central service unit (CSU) will be the main service unit for coordination within a flexible, decentralized infrastructure for sharing information. CSU will be staffed by experts in information management, who will manage SIS technical development, coordinate Specialist Group and staff training, and execute technical links to the Biodiversity Conservation Information System (BCIS). Through the central service unit, the SIS geo-referencing component will allow GIS linkage, thus enhancing SSC's capacity to monitor changes in biodiversity and contribute to conservation planning.

Building SSC Capacity

SIS will build capacity at three levels: (1) Specialist Groups and their members will be provided with the tools and training needed to strengthen their information management capacity; (2) SSC as a whole will be able to draw from the network-wide common framework to efficiently produce relevant and timely biodiversity conservation information products; and (3) SSC will be positioned to contribute to integrated information products through the BCIS, the consortium of twelve international conservation organizations working together to ensure that their data, information, and expertise influences conservation decisions.

Progress to Date

Luigi Boitani (SSC Executive and Steering Committees) and Andrew Smith (Chair, Lagomorph Specialist Group) are leading the SIS development process. The SIS Data Management Working Group (DMWG) guides development of the SIS software tool. It comprises members with expertise in informatics, information management, and biodiversity analyses. Careful selection of the DMWG has ensured expertise representative of terrestrial and aquatic species, plants, animals, and invertebrates. As with the IUCN Red List Categories and Criteria, it is particularly challenging to develop a system relevant to the wide variety of life forms addressed by the SSC network, and the SIS planning team is committed to developing a software package and system that will support the needs and characteristics of all types of species.

General Program Development

Over the past 18 months, the SIS planning team has focused on development of the full Service. This has included software development, planning for sufficient support into the network, composition of the Central Service Unit, and planning for analytical products (biodiversity analyses). A significant amount of time has been devoted to raising funds for system implementation, including an effort to secure funds for Specialist Group participation, to cover some of the essential costs of setting up and running the system within the volunteer network. Most of these fundraising efforts are very recent. At a later date we will report on how successful we have been.

Collaborative projects that will draw on SIS have been planned at the BCIS consortium level. For example, SSC, BirdLife International, the IUCN World Commission on Protected Areas, and the World Conservation Monitoring Centre have designed a project to identify high concentrations of threatened species and analyse them against protected areas. Although the aim is to develop this capacity globally, BCIS is first proposing to test the concept in Mesoamerica, in collaboration with the IUCN Regional Office there (ORMA). SSC has chosen to pursue this project for several reasons, including relevance to information demands emerging from the CBD and the funding potential for SIS development (including support to Specialist Groups). The concept paper, "Enhancing the Role of Protected Areas and Bio-Regional Planning in the Conservation of Threatened Species," is also available from the SSC secretariat upon request.

SIS Software Development

As with any information management system designed for a large number of users with varying interests, user participation in system development is critical. Therefore, the first (0.1) version of the SIS software was provided to all SSC Specialist Groups in 1997 for evaluation. Responses were considered at a November 1998 workshop, at which several Specialist Groups and partner organizations were represented.

Based on the results and decisions made at that meeting, the final stages of SIS conceptual development were planned. One of the main tasks in the first half of 2000 will to complete the development of the software. Seven representative Specialist Groups have been selected to carry out an in-depth analysis of the second (0.2) version software between January and March 2000 (Antelope, Lagomorph, Marine Turtle, Mediterranean Island Plant, Mollusc, Orchid, and Primate Specialist Groups). At the end of March, a workshop will be held to agree to final revisions to version 0.2, which will lead to the full working release version (Version 1.0). BirdLife International and Wetlands International will test the system with their respective Specialist Groups as well. Representatives of the selected testing Specialist Groups, disciplinary Specialist Groups, and SSC partners will participate in the workshop.

SIS Implementation

The software is expected to be fully developed by September 2000 with the goal of presenting and officially launching it at the Second World Conservation Congress. Following its presentation at the Congress the software will be distributed to all Specialist Groups and to other relevant partners in the SSC network. Distribution will be done by diskette or CD-ROM. With this implementation, the Species

Information Service will start. It is anticipated that full SIS implementation will phase in over a period of several years. Specialist Group Chairs should discuss timing with their respective SSC Program Officers, and determine resource needs and feasible phase in. At that time, an appropriate SIS focal point within the Specialist Group will be discussed (noting that in most cases this will be someone other than the Specialist Group Chair).

Questions are welcome. Please direct them to Mariano Gimenez Dixon at the SSC Program Office in Switzerland. ◆ *Contributed by Luigi Boitani and Andrew Smith, Co-chairs, SIS Data Management Working Group.*

Peter Scott Award for Conservation Merit Presented to Dr. Tony Cunningham

Over the course of the Species Survival Commission's 50 year history, the flexibility of the SSC's network and capacity to mobilize around emerging issues has allowed SSC to undertake a diverse array of activities—all on a volunteer basis. However, the collective achievements of the SSC are only possible through the work of dedicated individuals. As such, it was appropriate to mark SSC's anniversary by recognizing and celebrating an individual contribution. At the International Botanical Congress in August 1999, one special SSC member was recognized for his outstanding contribution to conservation. The 50th anniversary Peter Scott Award for Conservation Merit was presented to Dr. Tony Cunningham.

The Peter Scott Award recognizes highly significant achievements in conservation. In the case of Tony Cunningham, this award was presented in recognition of his years of important and influential work related to the conservation dimension in the use of plant resources in Africa. Tony's terminal degree was a PhD in Botany from the University of Cape Town and his field of research is the complex area of ethnoecology—involving resource use by people and the consideration of both cultural and ecological factors in approaching issues such as land-use planning, non-timber plant resource harvesting, and collaborative management.

His work has involved important projects such as surveys of African medicinal plants for the World Wide Fund for Nature (WWF), work in Kenya related to improving sustainability in the wood carving trade, and collaborative management work in Bwindi Impenetrable National Park, Uganda. In Uganda, he worked to identify the interests of local people vis-a-vis park resources and his work helped form the basis of negotiations and agreements between park authorities and local communities. This has been instrumental in easing tensions in that area.

Since 1992, Tony has been responsible for the Africa component of the People and Plants Initiative, a joint program of WWF/UNESCO/Royal Botanic Gardens Kew on ethnobotany and sustainable use of plant resources. Much of this work has involved building capacity among resource management agencies to enhance their ability to work collaboratively with local communities. Training has been a major part of this, and Tony has helped influence training methodologies, orienting science to be more useful to conservation.

In 1993, SSC began to directly benefit from Tony's formidable knowledge of the interaction between cultures and plants and his energy, vision, and commitment, as he was appointed Co-chair of the SSC Medicinal Plants Specialist Group, together with Uwe Schippmann. The Medicinal Plant Specialist Group is very active in undertaking surveys of priorities in medicinal plant conservation and providing technical advice and support to CITES.

Tony stepped down as Co-chair of the Medicinal Plants Specialist Group in 1998, although he continues to be an important member of the Group. It is hoped the SSC will continue to benefit from his skills, wisdom, and expertise for many years to come. It was truly befitting to award this special SSC member with our greatest honor, the Peter Scott Award for Conservation Merit.◆ *Contributed by the Office of the* SSC *Chair.*

XXI IUFRO Congress 2000

The International Union of Forestry Research Organizations (IUFRO), a renowned international body in forestry research, has entrusted Malaysia to host the prestigious XXI IUFRO World Congress to be held in August, 2000 at the Putra World Trade Centre, Kuala Lumpur. This Congress will see the convergence of 3,000 foreign and local participants, making it the largest scientific congress on forestry to be held in Malaysia, the first developing country ever to host the Congress in the 100 year history of IUFRO.

The theme of the Congress, "Forests and Society: The Role of Research," was chosen to reflect the increasing importance of research and development in sustainable forest management. The Congress, with the support of the Malaysian Government, will be organized by the Organizing Committee headed by Forest Research Institute Malaysia (FRIM).

IUFRO, a non-profit and non-governmental international scientific body, was established in 1892. Among the tasks undertaken since its formation have been to promote international coordination and cooperation in research and development on various aspects of forest science. IUFRO now has 676 member organizations from 105 countries.

The Congress will cover pertinent issues such as sustainable management of natural resources, forest and society needs, changes in environment and society, cultural diversity in forest management, and the global vision of forest and society. A renowned speaker will address each of these topics at the Congress during the keynote addresses.

Apart from keynote addresses, there will be numerous scientific sessions comprising technical paper and poster presentations based on the above theme and issues. Presentations for Scientific Achievement Award, Outstanding Doctoral Research Award, and Best Poster Award will also be some of the highlights of the Congress. Commemorative stamps will also be launched.

A one-day tour within Klang Valley, related to forestry activities to highlight Malaysia's commitment towards achieving Sustainable Forest Management, will be conducted. For the accompanying persons, special programs will be organized. Post-Congress excursions will also be organized covering Malaysia and selected neighboring Asian countries.

The promotional activities initiated by the Congress Organizing Committee and IUFRO Headquarters in Vienna have brought encouraging response from scientists, forest managers, planners and decision-makers worldwide. Brochures, general information, posters, an information package, car stickers, and souvenir items have been produced to promote the Congress.

To further promote the Congress, more activities are being planned and implemented. The registration package will be ready for distribution by the end of 1999. It will contain detailed information on the scientific program, tours and excursions, as well as accompanying persons' program. The registration fees for participants are listed as follows:

Developed countries:
Before 31 March, 2000: US $400
After 31 March, 2000: US $480

G77 countries and China: US $360

Accompanying person: US $100

Local participants:
Before 31 March, 2000: RM 500
After 31 March, 2000: RM 600

Students:
Overseas: US $360
Local: RM 500

To facilitate travelling, Malaysian Airlines (MAS), the official carrier, will offer referential rate to participants attending the Congress.

For further information, please contact: The Congress Secretariat, tel: 03-6372135/630 2153; e-mail: iufroxxi@frim.gov.my; website: http://frim.gov.my/iufro.html.

Development and Sustainable Use of Natural Resources in Africa: Conflict or Complement?

Second Pan African Symposium on the Use of Natural Resources in Africa July, 2000, Ouagadougou, Burkina Faso

The First Pan African Symposium on the Sustainable Use of Natural Resources in Africa (Zimbabwe, 1996), called for the further development of the SSC Sustainable Use Specialist Group (SUSG) to cover West, Central, North, Eastern, and Southern Africa. These networks have since been established to promote and facilitate research and learning on optimal natural resource management strategies for Africa.

SUSG is pleased to announce that the Second Pan African Symposium on Sustainable Use will be held on 24-27 July, 2000 in Ouagadougou, Burkina Faso. The purpose of the symposium is to explore the impact of development on the sustainable use and conservation of natural resources in Africa. Representatives of governments, universities, non-governmental organizations, community-based organizations, private companies, and international organizations will participate.

Focus: Due to the continent's heavy reliance on natural resources for economic development, there is an emerging African voice claiming that sustainable use strategies are key to environmentally sustainable development. A contrary view claims that conservation and development should be pursued separately, on different land, with different resources, and with different benefit streams. Other African voices claim that these strategies can be complementary. The symposium will explore these approaches to development, drawing on available scientific knowledge as well as practical experience, and will seek to facilitate a unifying vision for development and conservation on the African continent.

Objectives: To assess the success and failure of various conservation and development programs relevant to the management of renewable natural resources across Africa; to distill critical lessons for the future; and to improve Pan African scholarship in this field.

Structure: A wide variety of formats will be utilized to maximize participation and learning, including working group sessions, panel discussions, and dynamic interactive presentations. Critical thematic issues will structure the program. Technical data and written analyses from the various case studies will be provided as handouts.

Themes: Reflecting the complexity of the issues the symposium seeks to address, a wide range of themes will be explored, including:

- Regional similarities and differences in sustainable use strategies in Africa
- Devolution and the changing role of government in natural resource management
- Community-based conservation and natural resource management
- Tenure and natural resource management
- Co-management
- Modes of use—commercial and non-commercial, consumptive and non-consumptive
- Issues of scale (social, ecological, hierarchies of management, etc.)
- Transboundary issues in natural resource management
- Influence of international conventions and policy debates
- International trade regimes and natural resource management
- Role of northern hemisphere advocacy

Results: The proceedings of the symposium will be published by IUCN and communicated to the Second World Conservation Congress as well as to a wide variety of African audiences. All technical papers prepared for the symposium will be considered for publication

in a new peer reviewed journal that will be published by the African Regional Sustainable Use Specialist Groups with assistance from the IUCN Sustainable Use Initiative.

For more information: Bihini Won Wa Musiti, SUI African Regional Coordinator, IUCN Regional Office for Central Africa, BP 5506 Yaoundé, Cameroon; Tel: 237 216 496; fax: 237 216 497; e-mail: rocaii.iucn@camnet.cm.

First International Scientific Meeting: The Biology and Ecology of Alpine Amphibians and Reptiles

First Announcement

The DPPVN (Society for Bird Research and Nature Protection) is pleased to invite you to the first scientific meeting on the Biology and ecology of Alpine Amphibians and Reptiles. The meeting dates will be 1-3 September, 2000. The site will be defined in the second announcement (probably by the end of April), which will be mailed only to those who respond to this announcement.

The goals of the meeting are:

- to bring professional and amateur researchers together to exchange ideas and experiences on studies of alpine amphibians and reptiles;
- to promote amphibian and reptilian research in alpine regions and strengthen the collaboration between amphibian and reptilian specialists;
- to present results of new research on all aspects of the biology of amphibians and reptiles from alpine habitats; and
- to present new results of conservation actions focused on these organisms.

Language: The official language of the meeting will be English.

Abstracts: Abstracts of oral and poster presentation will be published. All abstracts should be submitted in English, and all participants will receive a booklet of abstracts at the start of the meeting. The informative abstracts should not exceed 250 words and should not contain tables and figures. Abstracts should be submitted by e-mail (see below) in Rich-Text Format (rtf) along with your preference for an oral or poster presentation.

Meeting fee: Ca. 60 EURO, which will include the program and abstracts, refreshments, and a meeting excursion.

Excursions: There will be meeting excursion arranged free of charge. For those who will wish to stay longer a post-meeting excursions will also be offered.

Registration form: Those intending to participate are kindly asked to send to the organizing committee by 1 April, 2000: name, institution, address (including e-mail and fax), the (general) title of the contribution, and the abstract.

Travellers advice: Information on accommodations (e.g. reservations, meals), which will probably be arranged by the organizers, will be sent in the second announcement.

Contact address of the organizing committee: DPPVN, Nusa Vogrin, Ptujska c. 91, SI-2327 Race, Slovenia, fax: 386 62 788 30 51; e-mail: milan.vogrin@guest.arnes.si.

A second announcement will be distributed only to those who respond to this announcement.

In Memoriam

Colonel Jack Vincent, MBE (1904-1999). Jack Vincent was born in London in 1904. He went to school at Willington, before earning a scholarship to Christ's Hospital at Horsham, Sussex, where he went at the tender age of 10. He left school at 16, and worked as a farm pupil in Sussex.

At the age of 21 he emigrated to South Africa on the 1820 Settlers scheme, and worked on two farms in the Richmond district of Natal before returning to England to work for the British Museum. In the late 1920s and early 1930s, he was sent on a number of bird-collecting expeditions which took him to most parts of Africa. On one expedition, he travelled in the company of Admiral Hubert Lynes of the Battle of Jutland fame.

On his return from the last trip in 1934 he met a Scottish woman, Mary Russell, in Cape Town and proposed to and married her within a week. They travelled together to London, where they lived for the next year. He then took a post with Jardine Matheson Co., who sent him to Zanzibar to start the first clove distillery in that most famous the "clove isles". There he spent three years building up the industry, before being transferred to a sisal plantation in Tanganyika. The health situation there was too poor for a wife and tiny child, so Jack moved to South Africa again, where he bought a farm he named Firle (after the farm he worked on in Sussex) in the Mooi River district, in 1937.

The war intervened, and Mary was left to run the farm on her own while Jack served with the then Royal Natal Carbineers in East and North Africa, where he was awarded the MBE for his service. In 1942 he was seconded to the British Army as an officer at the Staff College in Haifa, Palestine. It was there that he earned the PSC Dagger, the only South African ever to have done so.

On his return to South Africa, he was unable to get the farm back on its feet after his five-year absence, and he had to find work. In 1949 Douglas Mitchell asked him to take over the fledgling Natal Parks Board. The rest is history. Under his guidance, the Board became one of the most famous of the world's nature conservation authorities, particularly for the role it played in saving the white rhino from extinction.

In 1963, Jack accepted a post with the International Council for Bird Preservation, and moved with Mary to Morges, Switzerland, where he worked in international conservation for four years. It was during this time that he worked closely with the SSC, by producing the first ever bird Red Data Book. In the 1970s, he was awarded the World Wildlife Fund Gold Medal and the Order of the Golden Ark by Prince Bernhard of the Netherlands.

He returned to rejoin the Natal Parks Board in 1967, before finally retiring in 1974. He returned to Firle until the death of Mary in 1989, after 55 years of marriage. In 1993, he was awarded one final accolade: The University of Natal conferred an honorary Doctorate on him for his services to environmental conservation in the Province. He lived with his son John until his death on 3 July, 1999 at the age of 95.

Throughout his life, Jack Vincent earned the respect of all those with whom he worked and lived. He had a very simple philosophy on life, which was that if a job was worth doing, it was worth doing properly. His axiom was that if something he was about to do was morally and justifiably right, then he pressed on regardless. His achievements bear testimony to this. They were not done for himself, but always in the interests of others. He showed he was a leader who gained the confidence, respect, and love of his staff.

His son John and daughter Thamar, along with seven grandchildren and seven great grandchildren, survive Jack Vincent.◆ *Submitted by John Vincent.*

The IUCN/SSC Red List Program: Toward the *2000 IUCN Red List of Threatened Species*

Overview

The IUCN Red Lists are recognized as the most comprehensive, non-political approaches for evaluating the global conservation status of plant and animal species. The IUCN Red Lists apply a scientifically rigorous approach to determine risks of extinction and produce an objective list of threatened species. Red List criteria are relevant to all taxa and cover all regions of the world. The IUCN Red Lists draw upon a network of scientists and partner organizations in almost every country in the world. Collectively, these scientists hold what is likely the most complete scientific knowledge base on the biology and conservation status of species.

For more than three decades IUCN Red Lists and Red Data Books have been produced by the Species Survival Commission (SSC) of IUCN–The World Conservation Union. In response to calls for a more objective and scientifically rigorous system for determining threatened status, the SSC developed the current IUCN Red List Categories and Criteria, which were formally adopted by IUCN Council in 1994. As most SSC members are aware, the system has been under intense peer review. The Criteria Review forms part of a process to develop a formalized IUCN Red List Program, with a management and governance plan that will ensure the highest standards of documentation, information management, training, and scientific oversight. The IUCN Red List Program and its companion information management system (the Species Information Service) will provide fundamental baseline information vital for tracking the status of biodiversity as it changes over time.

The goals of the IUCN Red List Program are to:

1. Provide a global index of the state of degeneration of biodiversity; and
2. Identify and document those species most in need of conservation attention if global extinction rates are to be reduced.

To achieve these goals, the following objectives are proposed:

1. To assess, in the long term, the status of all species;
2. To establish a baseline from which to monitor the status of species;
3. To provide a global context for the establishment of conservation priorities at the local level; and
4. To monitor, on a continuing basis, the status of a representative selection of species (as biodiversity indicators) that cover all the major ecosystems of the world.

The IUCN Red List Categories and Criteria and the proposed goals and objectives of the Red List Program are leading IUCN in new directions that will enable the capacity to perform sophisticated biodiversity analyses. These will contribute significantly to scientific discovery and to political policies related to conservation at national, regional, and global scales. The comprehensive IUCN Red List Program will ensure that sound, rigorous, and consistent science is used in decision-making and resource-planning. In relation to all this it is proposed that the IUCN Red List be characterized by the following Operating Principles:

1. The *IUCN Red List* should be available to all potential users;
2. The process of undertaking status assessments of species should be clear and transparent;
3. The listings of species should be based on correct use of the categories and criteria and should be open to challenge and correction, based on the categories and criteria, when necessary;

4. All status assessments of species should be correctly documented and supported by the best scientific information available;

5. The *IUCN Red List* should exist as an electronic version on the World Wide Web to be updated once a year;

6. An analysis of the findings of the *IUCN Red List* should be published approximately every five years; and

7. The information on the web should be interactive, providing a mechanism to allow people (through appropriate procedures) to provide information for consideration when updating the list.

Establishment of Red List Authorities and their Responsibilities

The improved objectivity of the 1994 IUCN Red List Categories and Criteria has shown that the current ad hoc process of listing a species needs improvement. To achieve this, it is proposed that Red List Authorities be established for all taxonomic groups included on the *IUCN Red List*. In most cases, the Red List Authority will be the SSC Specialist Group responsible for a species, group of species, or specific geographic area. In the case of birds, BirdLife International will be designated as the Red List Authority and they will liaise with the bird Specialist Groups and Wetlands International where appropriate. In cases where the SSC and its partner networks do not cover a particular taxonomic group or geographic region, the Red List Program Subcommittee will recommend the appointment of other appropriate organizations or networks to act as Red List Authorities. No new species will be included on the *IUCN Red List* until it has been evaluated by an appointed Red List Authority and/or by the Red List Standards Working Group (a group established under the Red List Program Subcommittee). There will be some overlap in the jurisdictions of Red List Authorities, especially where regional groups consider taxa under the scope of a taxon group and vice versa. In such cases, no Red List Authority has precedence over another and both authorities need to collaborate in evaluating the status of the taxon concerned.

A key requirement for all Red List Authorities, whether or not they are part of the formal SSC or partner networks, is that they should adhere to specific agreed upon terms of reference. Acting on the advice of SSC staff, particularly the IUCN Red List Program Officer, the Red List Standards Working Group will maintain general oversight of the performance of Red List Authorities to ensure that terms of reference are followed. A crucial aspect of this proposed procedure is that acceptance of any listing requires that two or more named people within the recognized Red List Authority evaluate and then accept each assessment submitted for inclusion. In the case of overlaps in jurisdiction, written support for the assessment should be obtained from the other relevant Red List Authority.

To help with the evaluations, each Red List Authority will be issued with a copy of RAMAS® Red List. RAMAS® Red List is a software package developed by Applied Biomathematics, an ecological software development company, that implements the IUCN Red List Criteria for classifying species into one of the Red List Categories of threat (Critically Endangered, Endangered, Vulnerable, or Lower Risk). When any method for classification of conservation status is used, uncertainties may arise from natural variability, measurement error, or semantic uncertainty. RAMAS® Red List explicitly allows for the incorporation of such uncertainties in the input data and then propagates the uncertainties in calculating the Red List asessment. Depending on the uncertainties, the resulting classification can be a single category of threat or a range of plausible categories. Using this package, any uncertainties associated with the IUCN Red List assessments will be made explicit.

The Red List Program Subcommittee has decided to use the software on a trial basis for the *2000 IUCN Red List*. The Red List Standards Working Group will seek to ensure that each Red List Authority receives sufficient guidance and training in the application of the IUCN Red List Criteria and the RAMAS® Red List software. The Working Group will also be responsible for ensuring that standards are adhered to and that, as far as possible, there is consistency between Red List Authorities in listing procedures, particularly the application of the criteria.

The *IUCN Red List* on the Web will be interactive, in that it will allow users to submit comments and additional information. This information will be forwarded to the appropriate Red List Authorities for consideration. External users will not be authorized to change anything on the list. All changes and additions will be authorized by the Red List Standards Working Group or the IUCN Red List Program Officer (acting as their proxy) based on the recommendations of the Red List Authorities.

All taxa on the *IUCN Red List* must be re-evaluated by the appointed Red List Authorities at least once every ten years. Any taxon that has not been re-evaluated for more than ten years will revert to the Not Evaluated category. The IUCN Red List Program Officer will give Red List Authorities notice one year before the ten-year deadline.

Documentation Requirements and Taxonomic Standards

A major weakness of the existing IUCN Red Lists is that they are poorly documented. As a result the listings in them are unsubstantiated. To rectify this weakness, a new system of minimum documentation requirements is being developed. All species added to the *IUCN Red List,* or any listings that are changed, must be documented from the year 2000 onwards, following the requirements adopted. Red List Authorities will also be encouraged to start documenting all of their taxa currently on the *IUCN Red List.* The aim is to get all species on the *IUCN Red List* documented by the year 2003, except for those categorized as Lower Risk Least Concern. Documentation may be required for some of the Lower Risk species if petitions about their inclusion have been or are likely to be received.

Another weakness of the current IUCN Red Lists is the lack of sufficiently clear taxonomic standards. Taxonomic standards have been adopted and all species on the *IUCN Red List* should conform to these by the year 2003. All new species' listings, and any revisions to listings, must also be in accordance with the taxonomic standards. Deviations are permitted provided they are fully documented and substantiated.

The documentation requirements and taxonomic standards will be reviewed at regular intervals. These new, and seemingly complex, requirements are not intended to deter Red List Authorities and potential contributors. The documentation requirements and taxonomic standards are drafted as guides and deviations from them are acceptable, provided they are fully substantiated. Adherence to these standards will bring greater credibility and transparency to listings on the *IUCN Red List* and will facilitate better analysis of the findings. They will also provide a basis on which listings can be contested.

The *2000 IUCN Red List of Threatened Species*

In 1998 the Red List Program Subcommittee decided that instead of producing separate animal and plant Red Lists there should be a single *IUCN Red List of Threatened Species.* The first step in this process was the amalgamation of the updated threatened animal and tree lists to form the *1999 IUCN Red List of Threatened Species.* The launch of this new *IUCN Red List* will be early in 2000 and it will be available on the World Wide Web only. The *1999 IUCN Red List* will form the basis for the compilation of the *2000 IUCN Red List.*

The move towards an amalgamated animal and plant *IUCN Red List* together with the adoption of the new documentation requirements means that it is highly unlikely that a hard copy of the complete *IUCN Red List* will be published in the near future. Such a large publication would require two or more volumes, and this would require major sponsorship. Instead, an update to the *IUCN Red List* will be made available on the World Wide Web each year. Consideration is also being given to providing the *IUCN Red List* as a searchable database on a CD-ROM, or on a set of diskettes. The analysis of the major findings of the *IUCN Red List* will be published in hard copy at least every five five years, allowing a little flexibility for adjustments to align the launch with major events. The first published edition of the analysis will be launched at the Second World Conservation Congress.

The data underlying the *IUCN Red List* will be maintained in a series of databases within

the SSC's emerging Species Information Service (SIS). Each Red List Authority will be invited to manage a database within the SIS, and software will be provided free of charge for this purpose. This final version of the software is expected to be available towards the end of 2000, and so for the *2000 IUCN Red List* we shall continue to centralize the information in the manner that SSC has used traditionally.

The centralized version of the *IUCN Red List* will be maintained as a *non-public database* which will be a summarized amalgamation of the data held by Red List Authorities and which will be updated continually as information is provided by recognized Red List Authorities. A *public database* will also be maintained, which will be available on the World Wide Web, to be updated annually. This will be the official *IUCN Red List of Threatened Species*. The transfer of new information from the non-public database to the Web will be done once a year and this update will incorporate all changes made during the previous year. Each new annual edition of the *IUCN Red List* will be identified by the year (i.e., *1999 IUCN Red List of Threatened Species*, *2000 IUCN Red List of Threatened Species*, etc). A table indicating all changes from the List of the previous year will also be made available on the Web.

Timetable for the *2000 IUCN Red List*

In order to ensure the greatest possible level of adherence to the standards and procedures of Red Listing, to make the process of listing smoother, and to allow all the participating organizations and Red List Authorities time to plan their inputs well in advance, the following approach for the *2000 IUCN Red List* is proposed:

- Red List Authorities to be appointed in December 1999-January 2000.
- Reports on taxa currently listed on the *IUCN Red List* will be sent by the Red List Program Officer to all Red List Authorities in February 2000.
- All new assessments, changes, corrections and petitions should be submitted to the appropriate Red List Authorities or to the Red List Program Officer by 30 April, 2000.
- All changes, corrections, additions, accepted petitions, etc., should be submitted by the Red List Authorities to the Red List Program Officer by 30 June, 2000.
- For petitions referred to the Petitions Committee (see petitions process below) justifications by both the Red List Authority and petitioner must be submitted to the Red List Program Officer by 31 August, 2000.
- The Red List Standards Working Group will meet in September 2000 to review any problems with the proposed changes, and to rule on petitions (see petitions process below).
- The *2000 IUCN Red List of Threatened Species* will be launched at the Second World Conservation Congress to be held in Amman, Jordan in October 2000.

The submissions should be in accordance with the documentation requirements and taxonomic standards adopted. The submissions, especially if they are additions to the *IUCN Red List*, should preferably be submitted as RAMAS® Red List input files. If RAMAS® Red List is not used, submissions should be along the lines of the documented examples presented in the Annex below. In order to meet the target of having all species on the *IUCN Red List* fully documented by the year 2003, the Red List Authorities have been asked to begin this documentation process in a stepwise fashion. For the *2000 IUCN Red List* we would like to include documentation on habitats, major threats and overall population trends for each species.

Handling of Petitions Against Current Listings

Status assessments presented in the *IUCN Red List* are now open to challenge. Petitions may be made against particular listings. However, such petitions may only be made on the basis of the Red List Categories and Criteria and in reference to any supporting documentation accompanying the listing. It is not possible to change listings for political, economic, or other

reasons not based upon the categories and criteria. The process for filing petitions is as follows:

1. Completed petitions should be submitted to the IUCN/SSC Red List Program Officer. The Red List Officer will check with the Red List Standards Working Group to determine whether or not the petition has been filed on the basis of the categories and criteria.

2. If the petition is not made on the basis of the criteria, it will be returned to the petitioner with an explanation as to why the petition cannot be considered.

3. If the petition is made on the basis of the criteria, it will be referred to the relevant Red List Authority. If the Red List Authority agrees with the petition, or if the petitioner and the Red List Authority come to agreement, then the petition will be accepted. The change will appear in the following update of the *IUCN Red List*. A notification of the change in listing will be placed in *Species* and on the SSC Web Site.

4. If the petitioner and the Red List Authority are unable to agree, the matter will be referred to the Petitions Committee formed under the Red List Standards Working Group.

5. The petitioner and the Red List Authority will each submit justifications for their case to the Petitions Committee. These justifications should not be longer than eight sides of A4 paper, 12-point print, and should provide the data to support their position. The data provided should be clearly linked to the use of criteria. The justifications should be submitted to the IUCN/SSC Red List Program Officer by 31 August each year.

6. The justifications will be circulated to independent expert reviewers for confidential comments prior to the meeting of the Petitions Committee.

7. The Petitions Committee will meet or consult once a year, in September or October, to review petitions that could not be resolved. It will make rulings on such cases based on the information provided in the justifications coming from the petitioner and the Listing Authority. All changes will appear in the next update of the *IUCN Red List*. A notification of the judgement on any petition, and any resulting change in listing, will be placed in *Species* and on the SSC Web site.

In order to prevent continuing petitions on the same species, the Red List Standards Committee will only accept a petition if it is based on new information or re-interpretation of existing information. Potential petitioners should note the timetable laid down for the *2000 IUCN Red List* and must ensure that their petitions concerning taxa listed on the *1999 IUCN Red List of Threatened Species* reach the Red List Program Officer by 30 April, 2000 for circulation to the relevant Red List Authorities.

Further Information

For further details about the Red List Program especially the Red List Authorities, documentation requirements, taxonomic standards, RAMAS® Red List software, or the petitions process, please contact Craig Hilton-Taylor, IUCN/SSC Red List Program Officer, 219c Huntingdon Road, Cambridge CB3 0DL, United Kingdom, fax: 44-1223-277845, e-mail: craig.hilton-taylor@ssc-uk.org.

To purchase copies of RAMAS® Red List please contact: Isabelle Crosset, IUCN/SSC, Rue Mauverney 28, Gland CH-1196, Switzerland, fax: 41-22-999 0015; or Applied Biomathematics, 100 North Country Road, Setauket, NY 11733, USA, fax: 516-751 3435. Single-user and site-licensed copies of the software sell for US $295 and US $445 respectively (plus postage and packaging). These are discounted prices. A portion of the amount received for every copy bought *through IUCN* will be reinvested in the Red List program. See http://www.ramas.com for further details about the software.

Acknowledgements

Craig Hilton-Taylor gratefully acknowledges a generous fellowship from the Center for Applied Biodiversity Science (Conservation International Foundation); and the UK Depart-

ment of Environment, Trade and the Regions for funding a significant portion of the Red List Program; and Conservation International and WWF (UK) for funding various aspects of the Red List Program.

Annex: Examples of Documented Species

The following examples are largely based on fact, but various items have been modified so that the documentation requirements can be illustrated. Hence they should not be interpreted or used as valid assessments. Full documentation as used in the examples here will frequently not be available, so most assessments will be accompanied by much briefer and simpler accounts. The Antelope Specialist Group, BirdLife International, and the Cetacean Specialist Group are thanked for providing the information for these examples and allowing them to be used here.

Example 1

Class: Aves; **Order:** Psittaciformes; **Family:** Psittacidae

Taxon Name: *Ara glaucogularis* (Dabbene 1921)

Common Name: Blue-throated macaw

Status: Critically Endangered (CR C2b)

Distribution: Bolivia

Range: 18,000 km^2

Population: 50 ↓

Habitats: Tropical grassland/savanna and forest

Threats: Commercial exploitation, livestock farming, logging

Rationale: Qualifies due to its extremely small population in a single area, where it continues to decline as a result of illegal trade.

Range and Population: Known from the Llanos de Majos in northern Bolivia at an altitude of 200-300 m. Concentrated east of the upper río Mamoré, Beni, where the wild population was rediscovered in 1992 (Duffield and Hesse 1997; Yamashita and Barros 1997). A pair in Amboró Protected Area, Santa Cruz, in 1984 probably escaped from captivity, but macaws could wander to this area (Clarke et al. 1996). Population estimates vary from 50-100 individuals distributed over 18,000 km^2 (Duffield and Hesse 1997; Hesse 1998) to c. 200 birds within 8,000 km^2 (Duffield and Hesse 1997; Yamashita and Barros 1997). An estimated 1,200 or more wild-caught birds were exported from Bolivia during the 1980s, suggesting that the population was formerly much higher (Yamashita and Barros 1997).

Habitat: Inhabits a mosaic of seasonally inundated savanna, palm groves, forest islands and possibly gallery forest, in the humid lowlands. Its presence is correlated with availability of its palm fruit food, notably the locally abundant *Attalea phalerata* (Hesse 1998).

Threats: Severely threatened by illegal exploitation for the national and international cage-bird trade. All known sites are on private cattle ranches, where burning and clearing for pasture and tree-felling for fuel have reduced the number of suitable nest trees and inhibited palm tree regeneration (Duffield and Hesse 1997; Hesse 1996). Nest-site competition from other large macaws may become a threat as potential nest trees decrease (Hesse 1996).

Conservation Measures: Listed under CITES Appendix I, and live export from Bolivia was banned in 1984. Illegal export continues as there are no mechanisms to control international trade (Duffield and Hesse 1997). Attempts to reverse this situation have started through an agreement with a federation of local landowners to control access and deter potential trappers (Hesse 1998). Known subpopulations are patrolled by local guards and local environmental awareness campaigns are in progress (Martuschelli et al. 1998).

Assessor: BirdLife International
Date: 01/08/ 1998

Evaluators: Stattersfield, A. and N. Collar (BirdLife International), **Date:** 05/11/1999

References: [*All the references cited above would normally be given here in full, but to save space they have been omitted from the example*].

Example 2

Class: Angiospermae; **Order:** Magnoliales?; **Family:** Canellaceae

Taxon Name: *Warburgia salutaris* (Bertol. f.) Chiov. 1937

Common Name: Pepperbark tree

Status: Endangered (EN A1acd)

Distribution: South Africa (KwaZulu-Natal, Mpumalanga, Northern Province), Mozambique, Swaziland and Zimbabwe.

Range: 18,000 km^2

Population: ↓

Habitats: Subtropical savanna and forest

Threats: Traditional exploitation, expansion of arable agriculture and human settlement, logging

Rationale: Decline in parts of the range is almost 100%; in others it is not as severe. A decline of 50% appears reasonable based on direct observations, the decline in area of occupancy, and continuing high levels of exploitation.

Taxonomic Reliability: This species may be conspecific with *W. ugandensis sprague.* If so, this would greatly extend the range of this species into East Africa and its global status would have to be reassessed.

Range and Population: Occurs from northern KwaZulu-Natal in South Africa northwards through Swaziland into Mpumalanga and Northern Province of South Africa and into Mozambique and eastern Zimbabwe. There are records from southern Malawi, but it is not clear if these records are of this species or the closely related *W. ugandensis.* Although having a very wide distribution, subpopulations are highly scattered and mostly very small, comprising just a few mature individuals in each. Large, relatively untouched subpopulations occur in the Northern Province. In KwaZulu-Natal, there is very little seed set and no seedlings have been reported; all plants seen have reproduced vegetatively.

Habitat: Found in forests and savanna woodland.

Threats: There has been habitat loss due to agricultural activities, expansion of human habitation, and logging for firewood and timber. The main threat is the removal of bark, stems, and roots for traditional medicinal purposes. Extensive removal of bark has lead to the death of many plants and the near extinction of the species in a large part of its range.

Conservation Measures: There are a number of projects underway to provide a cultivated source of the plant material, and millions of clones have been produced for distribution. Plants have been reintroduced into two game reserves in KwaZulu-Natal. Although plants occur in a number of protected forests, it is difficult to prevent debarking taking place.

Assessor: Hilton-Taylor, C., **Date:** 15/01/1998

Evaluators: Willis, C. and J. Golding (Southern African Plant Specialist Group), **Date:** 05/11/ 1999

References: [*The references for the above account have been omitted from the example to save space*].

Example 3

Class: Mammalia; **Order:** Cetacea; **Family:** Balaenidae

Taxon Name: *Balaena mysticetus* (Linnaeus 1758)

Common Name: Bowhead whale

Status: Endangered (EN D1)

Distribution: Greenland (Denmark), Norway, Russia (Svalbards-Barents Sea Subpopulation)

Range: ? km^2

Population: ↓

Habitats: Deep sea, shore-lines

Threats: Pollution, climate change

Rationale: The total subpopulation is likely to number less than 250 individuals, so there are certainly fewer than this number of mature individuals.

Range and Population: An Arctic species centered in the Greenland and Barents Seas, including waters around Franz Joseph Land. Normal limits are considered to extend from northeastern Greenland to the Kara Sea and south at least occasionally to Finmark and Jan Mayen. There is no estimate of population size. Sightings from 1945 to 1990 were summarized by Moore and Reeves (1993) and included only a few involving tens of individuals. Zeh et al. (1993) described the current population as a "severely depleted fragment" and agreed with Christensen et al. (1992) that it formerly numbered tens of thousands and now may number only tens of individuals. Woodby and Botkin (1993) estimated that there were at least 25,000 whales in the 1670s. Most recent observations have been in the general vicinity of Svalbard and Franz Joseph Land (Moore and Randall 1993). There appears to be very little, if any, movement of individuals into this subpopulation from other subpopulations.

Habitat: Bowhead whales are migratory and their seasonal distribution is strongly influenced by pack ice (Moore and Reeves 1993). During the winter they occur in open-water areas near the ice edge, in polynas, and in areas of unconsolidated pack ice. During the spring these whales use leads and cracks in the ice to penetrate areas that were inaccessible during the winter due to heavy ice coverage. During the summer and autumn they are widely distributed in high latitudes, with concentrations in areas where zooplankton production is high. The autumn migration is coastal and marked by foraging along the way.

Threats: This subpopulation is not hunted and incidental mortality or serious injury from entanglement in fishing gear and ship strikes has not been reported. Environmental threats, such as pollution (Bratton et al. 1993) and global warming (Tynan and DeMaster 1997) could be important but are difficult to define and evaluate. Of all bowhead subpopulations, this one may be the most exposed to radionuclides in the food chain because of Soviet releases into the marine environment.

Conservation Measures: All range states belong to the International Whaling Commission, and the legal protection from hunting accorded this stock is considered effective. No specific mechanisms are currently in place to protect bowhead habitat or to prevent incidental mortality in fishing gear. However, more general measures taken for environmental protection of the northeast Greenland, Svalbard, and Franz Joseph Land may have some beneficial effect on the habitat of bowheads

Assessors: Reeves, R. and Cetacean Specialist Group Members, **Date:** 04/05/1999

Evaluators: Taylor, B. and Reeves, R. (Cetacean Specialist Group), **Date:** 29/07/1999

References: [*The references have been omitted from the example to save space*].

Example 4

Class: Mammalia; **Order:** Artiodactyla; **Family:** Giraffidae

Taxon Name: *Okapia johnstoni* (P.L. Sclater 1901)

Common Name: Okapi

Status: Lower Risk Near Threatened (LR/nt)

Distribution: Democratic Republic of Congo, Uganda (RE)

Range: 100,000 sq. km

Population: ?/ ↓

Habitats: Tropical forest

Threats: Local exploitation, expansion of human settlement, and arable agriculture

Rationale: Although fairly restricted, the major protected area subpopulations are apparently stable, but numbers are declining outside of these and the future of some reserves is precarious.

Range and Population: Occurred in both the Democratic Republic of Congo (DCR) and Uganda, but following the extinction of the Ugandan portion of the population through poaching and habitat loss, it is now endemic to the DCR. The Ituri Forest and Maiko National Park support major populations. Also present in small, declining numbers along the Semliki River in the northern section of the

Virunga National Park. Very little is known about the status of the species outside the protected areas. Its total range covers an area of about 100,000 sq. km and density estimates based on radio telemetry studies indicate that there could be more than 10,000 individuals.

Habitats: Inhabits areas of dense, low undergrowth within the equatorial forest, especially in areas intermixed with treefalls. Prefers older secondary forests.

Threats: Local exploitation for skins and bushmeat is the major threat. Expanding human settlement and agricultural activities is also having an impact on habitat loss. The Ituri region has recently become a development frontier with growing numbers of agricultural immigrants and prospectors, and the okapi's status could deteriorate rapidly if the region's forests are opened up to organized commercial exploitation.

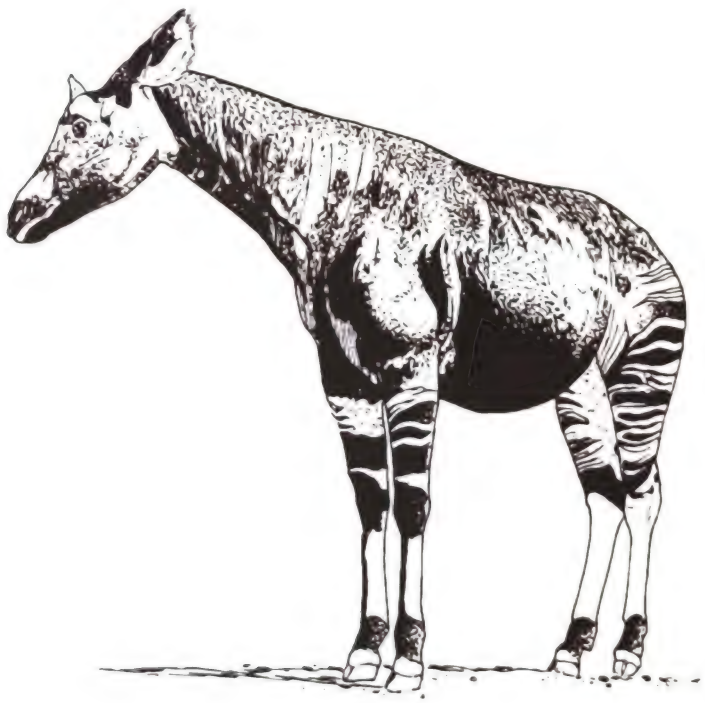
Conservation Measures: Occurs in a number of national parks and reserves. A unique system of locally controlled forest reserves, including the Okapi Faunal Reserve, have been established in the Ituri region. The okapi has become the flagship species for the conservation of the Ituri ecosystem. Ituri was, until recently, protected by its remoteness and inaccessibility. Even during the 1996-97 overthrow of the former government, the Ituri Forest subpopulation remained stable despite a complete lack of law enforcement in the region. The stability of the Maiko National Park subpopulation is also due to its remoteness and very low human population density, rather than active conservation measures.

Assessors: Antelope Specialist Group, **Date:** 09/08/1999

Evaluators: East, R. and R. Estes (Antelope Specialist Group), **Date:** 09/08/1999

References: [*The references have been omitted from the example to save space*].

Craig Hilton-Taylor
SSC Red List Program Officer



Zamia furfuracea: Natural Heritage of Veracruz, Mexico

Rescue from Extinction and Sustainable Use

Zamia furfuracea, also known as wild corn and ball palm, is a wild Mexican plant endemic to central Veracruz. It lives on the coastal dunes, generally close to beaches, along a narrow littoral strip. The type of soil where it grows is sandy and nutrient-poor, unsuitable for agriculture. The ball palm stabilizes the dunes where it grows. It may grow to one meter tall; its trunk is underground and commonly branches off when adult. The *zamia* belongs to the order of Cycadales, gymnosperm plants with primitive characteristics and in general of a fern- or palm-like appearance. Like the great majority of the cycads, the zamias are highly valued as exotic ornamental plants in the United States, Japan, Australia, and in the greater part of Europe.

Zamia furfuracea is in danger of extinction because:

1. Its numbers have become substantially reduced in their natural state.
2. Its habitat is being reduced due to the expansion of agriculture and the raising of livestock.
3. They are overexploited through illegal trade.

We do not know when the illegal exploitation started, but it became notorious for the first time in the 1960s and particularly intense in the 1980s, with volumes of up to 40 tons of plants a week, and about four tons of seeds a year. This illegal exploitation continues to be a serious threat for the survival of this species in its natural environment. If the illegal extraction of adult plants and seed continues, in less than ten years zamias may disappear as a natural resource and as an important component of the vegetation that lives on the dunes.

Clandestine extraction in the countryside is a lucrative activity in which people without any knowledge about the plant participate, as most of them are peasants with limited resources. The present price of a zamia in the countryside is 10 pesos for an adult plant, while a kilogram of seeds (containing around 820 seeds) costs only 25 pesos. In the limited national market the selling price ranges between 20 and 100 pesos, while abroad it ranges from 235 to 755 pesos. Florida in the United States constitutes the chief market. Besides North America, Asia and Europe are among the markets with a major demand not only for zamias but for the cycads in general.

To prevent its disappearance, the cultivation of *Zamia furfuracea* has recently been promoted among local peasants in accordance with national standards of wild life protection. Tree nurseries managed by rural cooperative societies with technical and scientific supervision by researchers from the University of Veracruz have been set up. These tree nurseries can produce great quantities of plants to be legally traded and reintegrated to their natural habitat. At the same time, the objective is to increase the economic resources of the rural population in order to guarantee the survival of the species in its place of origin, by diminishing the danger of extraction it is subject to in its natural state. The tree nurseries function as education and research centers, where studies on the basic biology of these plants are carried out, methods of propagation and cultivation developed, and methods of production evaluated. Together with the people in charge of the tree nurseries, we attempt to make effective the governmental measures on the protection of species in danger of extinction through the informed participation of local peoples.

The project was first established in a coastal peasant community organized as ejido (common land), in an area with little possibility of economic development. The main activities are the extensive livestock raising in pasturelands with a very low index of summer pasture and the cultivation of sugar cane. As the inhabitants

obtain very little income from working their own land, many of them work as temporary laborers on neighboring ranches, emigrate to the United States, or simply carry out other complementary activities such as fishing, gathering, catching and selling sand crabs, or selling plants and seeds of *Zamia furfuracea*.

The plantation was rustically constructed with local materials, using a minimum of financial and technical resources. The University of Veracruz and the National Council of Science and Technology of Mexico (Consejo Nacional de Ciencia y Tecnologia de Mexico), as well as the organization GTZ (Deutsche Gesellschaft fur Technische Zusammenarbeit) of Germany, granted the financial support for its establishment and functioning. Moreover, PROFEPA (the federal Attorney's Office of Environmental Protection), SEMARNAP (Ministry of Environment, Natural Resources and Fishing) and CITES supervise the plantation. Sixty rural families, researchers in ecology and botany, and students of biology participate in the daily activities.

The University of Veracruz together with the SEMARNAP and PROFEPA will issue the certificate of origin of the plants, which fulfills the CITES specifications. There are 200,000 plants ready to be sold and the potential exists to produce up to 600,000 every year.

The tree nursery is planned to be self-sufficient and self-regulated, on a small scale, with very little technical involvement (this idea includes the progressive separation of researchers and students) and using elements generated in the countryside. However, all of this gravitates toward the logical conclusion for any system of production: its income-yield capacity. It is precisely this aspect that remains to be covered in order to attain all the objectives.

The working group has not yet made contact with the international markets where these plants are in demand. The General Administration of Research of the University of Veracruz and the GTZ, as well as other international institutions for the conservation and trade of wild life are helping to remedy this situation.

The attempt to comply with the principles of sustainability led the working group of the tree nursery to consider everything from minor technical details to the structural aspects of the society, such as consumption patterns, income distribution, technology employed, patterns of using space and resources, the availability of resources, speed of regeneration and the factors affecting them, methods of managing resources, alternatives between conflicting positions and values, and a balance between the urgent and the important.

Finally, everything leads us to ask: How to decide between conflicting values, where, in addition, it is not clear what is fair and what is correct? And how to persuade society to adopt developmental practices that are environmentally healthier? The topic is not only a matter for a working group; it merits urgent discussion by all society involved therein.

The small-scale cultivation of zamia in the region contrasts with the huge extensions destined for low-yield stock raising.

It is important to point out that this agrotechnology was started experimentally seven years ago, and that now the techniques of cultivation have been mastered and the following proved benefits have been obtained:

- The risk of extinction becomes remote as local people learn how to distribute the *Zamia furfuracea*.
- Its cultivation in rustic conditions constitutes a real alternative for the sustainable use of a wild resource.
- The peasant owners of this resource become the main guardians of its natural conservation.
- The replenishment of the reduced populations through reintroduction becomes another plausible achievement.

Purchasing cycads with a valid certificate of origin helps avoid natural extinction in the wild, more peasant families are employed, and illegal trade of cycads is discouraged.

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Phone and fax (28) 12 57 57

SSC Plants Program: Strategic Planning and Priorities

SSC is mobilizing to meet the challenge of global plant conservation expressed by a number of speakers at the recent International Botanical Congress (IBC) through development of the SSC Plant Conservation program. The most recent meeting of the Program's steering group took place in August 1999 in the Ozark Mountains, Missouri. This meeting was the third in a series aimed at developing a longer-term plant conservation strategy for the SSC. Priorities emerging from this meeting were:

- Finalizing SSC's strategic plan for global plant conservation.
- Developing the "Top 50" concept, especially to serve as a communication tool about plant conservation issues.
- Moving forward on Red Listing.
- Securing funding for a series of workshops on developing criteria for selecting important plant conservation sites.
- Implementing action on wild crop relatives, medicinal plants, and *in situ* conservation.
- Facilitating meetings of Specialist Group representatives and increasing opportunities for their participation in the SSC plant conservation planning process.
- Providing advice on plant conservation issues to the SSC Sustainable Use Initiative.
- Ensuring Action Plan implementation.
- Developing an annual workplan and prioritizing of SSC Plant Strategy activities.

Highlights of recent plant work of SSC included organizing an SSC symposium on global plant conservation, and an associated launch of the concept of a global SSC strategy for plants; publication of the Conifer Action Plan and its launch at the World Conifer Congress in late 1999; significant progress in the Orchid Specialist Group which has raised funds for a full time Executive Officer; negotiations to form more regional Specialist Groups; a special plant conservation issue of the IUCN publication *World Conservation* in 1998; and a second Plants Officer to move the program forward.

Much of the recent efforts of the plant program steering committee has been in preparing a strategy for plant conservation. The final draft of this is reproduced here and, in the spirit of this being a living document, we invite comments on the structure and substance of the strategy, which should be directed to Wendy Strahm, SSC Plants Officer.

Major foci for 2000 are determining priorities, identifying funding and collaborative partners, and facilitating action in those places and with those people who can make a difference.

IUCN/SSC Plant Conservation Program: 2000-2005

Goal: *The extinction crisis is acknowledged as a global problem, and the current rate of loss of plant diversity is decreased.*

Objective 1. Sound interdisciplinary scientific information underpins decisions and policies affecting plant diversity.

Output 1.1: The SSC Plants Program promotes conservation of important plant sites by refining the criteria for identification of Centers of Plant Diversity and other priority plant sites, and assisting in implementing programs to conserve such sites at appropriate regional, national, and local scales.

- **Activity 1:** Undertake a review of criteria for selecting priority plant conservation sites involving appropriate stake-holder groups, with a view to refining criteria at a range of geographic scales.
- **Activity 2:** Develop a Centers of Plant Diversity booklet on how to determine priority plant sites (along the lines of the Red List Criteria) and associated conservation actions.
- **Activity 3:** Through workshops encourage the process of selecting important plant sites at regional, national, and local levels, in association with IUCN members, IUCN regional offices, and other appropriate organizations and agencies.
- **Activity 4:** Through partnerships with national, regional, and local networks, facilitate one or more workshops for the development of site-based Action Plans for priority plant sites and plant site clusters, and ensure that Action Plans are available to local groups.
- **Activity 5:** Promote and develop appropriate monitoring programs for tracking action and implementation of site-based Action Plans.

Output 1.2: The SSC Plants Program participates in projects on specific conservation issues, such as the conservation of wild plants of importance for food and agriculture and other selected economic plants, and the study and mitigation of major threats by providing inputs to the development and implementation of these projects.

- **Activity 6:** Collaborate in reviews and analysis of existing guidelines for *in situ* conservation of plants and their further development, utilizing the experience gained from *in situ* research and management.
- **Activity 7:** Collaborate in projects on the conservation of wild relatives of crop plants; for example, in the development of a catalogue of wild relatives and the distribution and use of protected areas for their *in situ* conservation.
- **Activity 8:** Particular attention is paid to building capacity to combat major threats to plants, especially the growing global problem of invasive alien species.

Output 1.3: The SSC Plants Program assists the functioning, implementation, and growth of programs and information networks, which facilitates effective and rigorous listing of conservation status of plants.

- **Activity 9:** Promote, in collaboration with other interest groups, the concept of indicators, which provide periodic and regular "global state of biodiversity" assessments by tracking extinction, changes in overall threats and numbers of taxa under threat, action effectiveness, and data on critically threatened sites.
- **Activity 10:** Vigorously seek, in cooperation with the SSC Red List Program and other like-minded organizations, to establish funding to ensure ongoing security for plant listing programs, including the listing process itself.
- **Activity 11:** Conservation status information provided (especially) by the work of the SSC Specialist Groups is integrated into and provides guidance for the SSC Red Listing Program, and is used to help determine conservation priorities.

Objective 2. Collaboration and strategic alliances, including local and national organizations outside the SSC, are increasingly used within the plant conservation community to achieve plant conservation success.

Output 2.1: The SSC Plants Program forms and nurtures strategic alliances with appropriate international, national, and local organizations outside the SSC as part of an expanding global network.

- **Activity 12:** Identify existing partnerships and gaps, and actively seeks and establishes international, national, and local partnerships to develop and implement its Plants program.
- **Activity 13:** Develop and nurture partnerships that lead to funding for plant conservation activities.
- **Activity 14:** Encourage the representation of Program members at relevant conferences and meetings, the development of a calendar of such meetings, and the identification of participation opportunities.

Output 2.2: The SSC Plants Program forms partnerships and working collaborations among the SSC Plants Program and other sectors of the SSC and the IUCN, while it maintains and strengthens its own network.

- **Activity 15:** SSC members and other parts of IUCN develop integrated and effective ways to ensure that the needs of plants are fully recognized within all appropriate SSC/IUCN programs (including such initiatives as the Plant-Link concept with animal-based SSC Specialist Groups and participation in SIS and BCIS), and that they are built upon a common vision of biodiversity conservation and sustainable resource use.
- **Activity 16:** The SSC continues to create and implement its Plants Program as a core activity and to plan plant conservation actions primarily through Plant Specialist Groups, which are encouraged to seek their own strategic alliances with appropriate local groups (both within and outside IUCN).

Objective 3. Modes of production and consumption that result in the conservation of native plant diversity are adopted by users of plant resources.

Output 31: The SSC Plants Program identifies and supports activities promoting the sustainable use of plant resources, particularly working through sustainable use of plant resources, particularly working through Specialist Group programs, strategic links to other SSC and IUCN activities, and appropriate non-IUCN partnerships.

- **Activity 17:** Maintain and develop collaboration with appropriate organizations and programs (such as the SSC Sustainable Use Initiative) to achieve standards for assessing and managing the impact of use on wild plant resources.
- **Activity 18:** Promote the dissemination of the sustainable use concept for plants and ensure inclusion in national, regional and local planning documents, and ensure that Action Plans and activities involving plants take into account the sustainable use of plants.
- **Activity 19:** Participate, through the Medicinal Plants Specialist Group, in inter-agency collaboration on the conservation and use of medicinal plants with particular reference to sustainable production, benefit sharing, and community participation.

Objective 4. SSC's plants policy recommendations, guidelines, and advice are valued, adopted, and implemented by relevant audiences.

Output 41: The SSC Plants Program targets conservation professionals and institutions as part of its outreach activity.

- **Activity 20:** Make outputs widely available through an established and comprehensive network of professionals, practitioners, and institutions, with the Program becoming a clearing house for information on plant conservation, especially through its web site.

Output 42: The SSC Plants Program builds resources and helps others to build resources to support awareness campaigns on priority plant conservation sites, threatened species, and related issues.

- **Activity 21:** Use and strengthen existing links with widespread and effective disseminating media; vigorously develop new media relationships, including the creation of regular and effective press releases and articles on plant conservation needs, challenges, and achievements.
- **Activity 22:** Build capacity to create, review, and promote documented "Top 50" plant lists with a view to promoting conservation action from global to local levels, linking this with the IUCN Commission on Education.

Output 43: The SSC Plants Program promotes an integrated plant conservation philosophy that includes the concepts of sustainable use and protection, and this integration is increasingly strengthened by appropriate collaboration with both *in situ* and *ex situ* organizations.

- **Activity 23:** Incorporate integrated conservation messages, stressing the combined values of *in situ* and *ex situ* conservation, research, education, and recovery, into all SSC Plants Program documents and consultations.
- **Activity 24:** Promote, as a general principle, rapid response to changes in conservation priorities and adopt appropriate new concepts developed by plant research, management, and conservation communities.

Objective 5. Capacity to provide long-lasting, practical solutions to plant conservation problems is markedly increased.

Output 5.1: The SSC Plants Program encourages well-funded training, technology transfer, personnel exchanges, and information availability as principal plant conservation capacity-building measures for lesser-resourced nations.

- **Activity 25:** Identify and cooperate with existing international, national, and local plant conservation training programs, emphasizing within-country capacity building and the identification of training gaps.
- **Activity 26:** Promote the concept of "best practice," the identification of best practice case-studies, and the dissemination of this information to conservation practitioners through publications and Web sites (SSC's and those of its Specialist Groups).

Output 5.2: The SSC Plants Program vigorously promotes and facilitates research in conservation biology, sustainable plant use, off-site techniques, and the management of plants and their habitats (especially when linked to wider land and resource management).

- **Activity 27:**Collaborate with other plant conservation interest groups to formulate and promote an agenda of global research priorities with practical application at the local level.

Output 5.3: The SSC Plants Program vigorously pursues programs for conservation of plants at appropriate and linked scales from global to local, and raises overall capacity and levels of both discretionary and targeted funding.

- **Activity 28:** Develop a project for linking funding sources and new initiatives to facilitate both the operation of the SSC Plant Program and effective linkages to related programs and initiatives.

David R. Given and Wendy Strahm

Approaches to the Conservation of Species Used in Traditional Medicines

For millennia people have relied on medicinal products from wild sources. Traditional health care systems are known to us all, from the so-called "folklore" remedies in the west where, for example, traditional knowledge that willow is effective in treating certain ailments led to the production of aspirin, to the highly sophisticated and long-standing systems of eastern medicine. However, demands on wild sources of traditional medicinal products are increasing as the human population rises inexorably; as poorer countries are forced to decrease spending per capita on western health systems; and as the preference for natural remedies increases amongst western populations and people return to more traditional and homeopathic products. Although pharmaceutical companies appear to be investing less in bioprospecting due to the uncertainty over intellectual property rights and ownership, the chemical extraction of medicinal products from wildlife sources continues. Such often-unregulated extraction has led to concerns about the survival of many of the affected species.

How Can the Overuse of Wild Species be Addressed?

During the late 1970s and early 1980s, conservationists generally felt that trade restrictions and moratoria were the best possible solutions to overexploitation of endangered species for medicinal products, and little regard was given to beliefs in traditional medicines. In some cases this may have been successful, but in others it was a failure, and illegal exploitation continued relentlessly. The lack of success, and continued demand for wildlife products in the medicinal market can be partly explained by reference to anthropological literature, which suggests that people will not easily give up traditional beliefs. Consequently, to succeed in species conservation, policies must be developed in partnership with users of wildlife, and much more awareness of traditional beliefs is required.

In recent years TRAFFIC has adopted a collaborative approach, working directly with the people whose livelihoods and health depend on medicinal wildlife resources. This has set the stage for partnerships and collaborative efforts between the conservation and traditional medicine communities, aiming to secure sustainable supplies of valued medicinal wildlife for future generations. At the suggestion of both Traditional East Asian Medicine (TEAM) practitioners and conservationists, TRAFFIC organized in 1997 "The First International Symposium on Endangered Species used in Traditional East Asian Medicine." Besides providing a forum for productive dialogue, this meeting fostered a greater understanding of the needs and motivations of groups that had previously been somewhat antagonistic, but now pledged to work together. The subject of discussion at the symposium was the search for substitutes for tiger bone and musk in traditional East Asian medicine. It soon became clear that while the use of substitutes may be possible for some treatments, in certain life-threatening situations, preparations from some endangered species cannot be substituted. Consequently, it is in the interests of both conservation and traditional medicine communities to ensure the long-term conservation of these species. This was most clearly illustrated when, in November 1999 at an international conference on Traditional Chinese Medicine (TCM) and endangered wildlife conservation, China State officials pledged to work with international conservationist to ensure a sustainable trade in wildlife products used in TCM.

Surveys carried out in 17 African countries by TRAFFIC in 1998 identified 102 medicinal plant species and 29 medicinal animal species as priorities for conservation and management action. The survey found that not only are there

many wildlife products used in traditional medicine, but that in at least seven of the countries surveyed, traditional medicine has been integrated into national health care schemes. Therefore, it was concluded that efforts to stabilize the status of these species are not only in the interest of the conservationists but also in the interest of millions of people in this region whose health depend upon the local healthcare systems.

TRAFFIC has also conducted surveys of the attitudes to wildlife conservation and use of traditional medicines of Chinese communities in Hong Kong and America. From these it has emerged that many users of traditional East Asian medicines do not make the connection between the use of such medicines and their contribution to the demise of endangered species. Indeed, most respondents supported the need for the identification of effective alternatives to ingredients that are derived from endangered species. The results of the TRAFFIC studies suggest that medicinal wildlife utilization is not restricted to only a few players. Instead it is critical to bring all the stakeholders—including the health, private, and natural resources sectors—together to raise awareness of varying perspectives and to find ways to collaborate and cooperate in conservation efforts concerning medicinal wildlife.

What Can the SSC Network Do?

There has been much concern about the perceived impacts that traditional medicinal usage has had on charismatic megafauna such as rhinos, tigers, and bears by compounding the effects of habitat loss. However, in these cases action has been reactive and has come at a stage where conservation successes are difficult to achieve. In order to address the threats posed by the medicinal demand for species, conservationists must become more proactive. Action is needed before the world's medicinal plants face the same threat of extinction and before numbers of other animal species used for various medical purposes also decrease—for example corals used for repairing bone fractures, seahorses in TEAM, and snakes, spiders, and scorpions for anti-venom production. To be proactive, policy development will require more complete and reliable information on levels of use and especially their impact on wild populations.

The SSC network is renowned for the provision of information on the conservation status of species, through production of Action Plans and increasingly regular and quantitative assessments in the *IUCN Red List*. While the SSC produces a wealth of such information, it is clear that for a number of species impacted by trade, there is insufficient information at the local level to inform conservation decisions. Information on levels of demand can be collected relatively easily by undertaking market surveys. In contrast, formal wildlife population assessments are generally much more expensive and time consuming to carry out comprehensively over large areas, and consequently have been conducted for only a very few species. For effective conservation we need to know what impact both medicinal and other trade is having on wildlife populations. The challenge is to develop alternative cost-effective means of monitoring trends in population indices and to find indicators of the impact of harvest on populations, which can be used effectively in the absence of comprehensive population surveys and monitoring. Under the Convention on Biological Diversity, much effort is being put into measuring the diversity of ecosystems as a vital, first conservation step. However, relying on species inventories as measures of diversity may not indicate that a species is in decline until it is virtually too late, so indicators of population numbers or health must also be linked to the inventory collections.

With the need for alternative methodologies in mind, the Chicago Board of Trade Endangered Species Fund of the Chicago Zoological Society recently supported a project to assess the effectiveness of the use of alternative indicators of population status and trends in Asian bear species. Recent concerns about the impact on wild populations of the trade in bear parts for traditional medicinal uses have suffered from a lack of knowledge about the status of target populations in many range states. If this is the case for bears, what about the numerous species of plants and reptiles used for medicinal purposes? All of these issues are hampered by a need for more basic data to inform management decisions.

Asian bears exhibit many of the obstacles facing formal population status assessments—they are solitary, forest dwelling animals, inhabiting often remote and inaccessible landscapes at low densities, and are in many cases nocturnal. From May to September 1999, information was gathered from range states of the Asian ursine species (Asiatic black, brown, sun, and sloth bears) to attempt to infer trends in population status. Information gathered included rates of bear sightings by local people and Protected Area staff, rates of human/bear conflicts, habitat availability, and bear presence/absence in forest areas. Information on habitat availability and bear presence/absence could usually be gathered to indicate trends in population distribution and status. Not only were bear experts in range states of great help in this survey, but much information was also obtained from individuals with wider expertise in other taxa. Such cross-taxon comparisons of suitable indicators would enable many taxonomic groups to gain from the development of alternative monitoring methods.

Specialist Groups are uniquely placed to use their networks to collect information and to develop and promote the use of new methodologies to stimulate further information generation and collection. The conservation community must become more creative. The priority on the medicinal issue will be to develop indicators that can be used with species for which there is an increasing demand on the populations to supply the growing medicinal markets, and where conservation management decisions are currently based on little or no status information. If we make more use of indirect indicators of population status, and look wider for information that may help make an assessment of population trends, then undoubtedly gaps could be filled in the available information on species' status and population trends.

The conservation community is likely to benefit enormously from becoming more globally inclusive through personal contacts to policy makers, to academics, and to conservation practitioners on the ground. Specialist Groups are well placed to facilitate the greater exchange of information and dissemination of knowledge between all those involved in the consumptive use of wildlife in traditional medicines by increasing networks in range states and consumer countries.

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Vertebrate Species Richness and Endemism in Russia

Conservation of biological diversity is the most important problem of our time and must be a fundamental component of any national development strategy. Two very important attributes of biodiversity are species richness (the number of species in an area) and endemism (the number of species in that area which occur nowhere else). So, inventorying of species richness and endemism are the first steps in preparation of biodiversity conservation strategy of each country. In this paper we are present recent data on Russian biodiversity based on the most recent taxonomic studies of vertebrates (Table 1). Also, we define "hot spots" (areas which have a great number of endemics) of species-level vertebrate endemism in Russia (Table 2).

Endemics of Russia and Their Distribution

Mammals

Insectivora

Crocidura sibirica
Distribution: South of Western Siberia
Sorex camtschatica
Distribution: Kamchatka Peninsula
S. leucogaster
Distribution: Paramushir Island

Chiroptera

Myotis abei
Distribution: Sakhalin Island

Rodentia

Spermophilus musicus
Distribution: Northern slopes of Caucasus
Marmota camtschatica
Distribution: Eastern Siberia, Kamchatka Peninsula
Sicista kluchorica
Distribution: Northern slopes of Caucasus
Spalax giganteus
Distribution: Precaucasus region
Mesocricetus raddei
Distribution: Precaucasus region
Lemmus amurensis
Distribution: Eastern Siberia, Kamchatka Peninsula
L. sibiricus
Distribution: From White Sea to Kolyma River
Dicrostonyx torquatus
Distribution: From White Sea to Chukotsk Peninsula
D. vinogradovi
Distribution: Wrangel Island
Alticola olchonensis
Distribution: Olchon Island (Baikal Lake)
A. lemminus
Distribution: Northeastern Siberia
Microtus mujanensis
Distribution: Transbaikal region
M. evoronensis
Distribution: Lower Amur River region
M. sachalinensis
Distribution: Sakhalin Island
M. middendorfi
Distribution: Northern Siberia

Pinnipedia

Phoca sibirica
Distribution: Baikal Lake

Artiodactyla

Ovis nivicola
Distribution: Taimir Peninsula, north of Far East, Kamchatka Peninsula

Birds

Anseriformes

Rufibrenta ruficollis
Distribution: Western Siberia
Cygnus bewickii
Distribution: From Kola Peninsula to Chukotsk Peninsula
Anas formosa
Distribution: Eastern Siberia

Table 1. Diversity and Endemism of Vertebrates in Russia

Group	Number of Species	Number of Endemics	Percent	References
Mammals	305	21	6.9	Pavlinov and Rossolimo. 1998.
Birds	648	25	3.9	Stepanyan. 1990.
Reptiles	80	0	0	Ananjeva et al. 1998.
Amphibians	28	0	0	Ananjeva et al. 1998.
Freshwater fishes	342	44	12.8	Reshetnikov. 1998.
Cyclostomaes	9	0	0	Reshetnikov. 1998.

Table 2. "Hot spots" of Vertebrate Endemism in Russia

Region	Number of Mammal Endemics	Number of Bird Endemics	Number of Freshwater Fish Endemics	Total Number of Vertebrate Endemics
Baikal Lake	2	0	27	29
Northeastern Siberia (including Chukotsk Peninsula)	4	9	6	19
Eastern Siberia	3	8	1	12
Kamchatka Peninsula	4	3	3	10
Sakhalin Island	2	5	0	7

Falconiformes

Haliaeetus pelagicus
Distribution: Coast of Bering Sea and Sea of Okhotsk, Kamchatka Peninsula, Sakhalin Island, Kuril and Shantar Islands

Galliformes

Falcipennis falcipennis
Distribution: Far East (south), Sakhalin Island

Gruiformes

Grus leucogeranus
Distribution: Northern Siberia
Grus monacha
Distribution: Far East (south)

Charadriiformes

Tringa guttifer
Distribution: Sakhalin Island, Kamchatka Peninsula
Heteroscelis brevipes
Distribution: Northeastern Siberia
Eurynorhynchus pygmeus
Distribution: Chukotsk Peninsula
Calidris subminuta
Distribution: Siberia, Sakhalin Island, Komandor and Kuril Islands
A. acuminata
Distribution: Northeastern Siberia
B. tenuirostris
Distribution: Northeastern Siberia
Numenius minutus
Distribution: Northeastern Siberia
Numenius tenuirostris
Distribution: South of Western Siberia
Larus heuglini
Distribution: From Kola Peninsula to Chukotsk Peninsula

Passeriformes

Anthus gustavi
Distribution: From Pechora River to Chukotsk Peninsula
Motacilla taivana
Distribution: Northeastern Siberia, Sakhalin Island
Prunella montanella
Distribution: Eastern Siberia
Turdus naumanni
Distribution: Eastern Siberia
T. eunomus
Distribution: Eastern Siberia, Kamchatka Peninsula
Bombycilla japonica
Distribution: Far East (south)
Pyrrhula cineracea
Distribution: Eastern Siberia
Emberiza chrysophrys
Distribution: Eastern Siberia
C. tristrami
Distribution: Eastern Siberia

Freshwater Fishes

Salmoniformes

Salvelinus boganidae
Distribution: Taimir Peninsula, Chukotsk Peninsula
S. czerskii
Distribution: Chukochya River, Indigirka River, Lena River, Kolyma River
S. drjagini
Distribution: Taimir Peninsula
S. jacuticus
Distribution: Lena River
S. neiva
Distribution: Okhota River
S. taimyricus
Distribution: Taimir Peninsula
S. tolmachoffi
Distribution: Khatanga River
S. elgyticus
Distribution: Chukotsk Peninsula
S. albus
Distribution: Kronotskoe Lake, Kamchatka River
S. kronocius
Distribution: Kronotskoe Lake
S. levanidovi
Distribution: Rivers in north part of Sea of Okhotsk
S. schmidti
Distribution: Kronotskoe Lake
Salvwethymus svetovidovi
Distribution: Chukotsk Peninsula
Dallia admirabilis
Distribution: Amguema River
D. delicatissima
Distribution: Chukotsk peninsula

Cypriniformes

Romanogobio pentatrichus
Distribution: Kuban River, Laba River
Sabanejewia caucasica
Distribution: Kuma River, Terek River, Sulak River

Scorpaeniformes

Batrachocottus baicalensis
Distribution: Baikal Lake
B. multiradiatus
Distribution: Baikal Lake
B. nikolskii
Distribution: Baikal Lake
Cottocomephorus grewinskii
Distribution: Baikal Lake
C. inermis
Distribution: Baikal Lake
Paracottus knerii
Distribution: Baikal Lake
Comephorus baicalensis
Distribution: Baikal Lake
C. dybowskii
Distribution: Baikal Lake
Abyssocottus elochini
Distribution: Baikal Lake
A. gibbosus
Distribution: Baikal Lake
A. korotneffi
Distribution: Baikal Lake
Asprocottus abyssalis
Distribution: Baikal Lake
A. herzensteini
Distribution: Baikal Lake
A. intermedius
Distribution: Baikal Lake
A. palmiferus
Distribution: Baikal Lake
A. platycephalus
Distribution: Baikal Lake
A. pulcher
Distribution: Baikal Lake
Cottinella boulengeri
Distribution: Baikal Lake
Limnocottus eurystomus
Distribution: Baikal Lake
L. godlewskii
Distribution: Baikal Lake
L. griseus
Distribution: Baikal Lake
L. megalops
Distribution: Baikal Lake
L. pallidus
Distribution: Baikal Lake
Neocottus werestschagini
Distribution: Baikal Lake
Procottus jeittelsii
Distribution: Baikal Lake
P. gurwici
Distribution: Baikal Lake
P. major
Distribution: Baikal Lake

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Specialist Group Reports

Antelope Specialist Group

The Antelope Specialist Group has compiled detailed information on each of the antelope species in sub-Saharan Africa.Threats to the survival of antelopes in the region arise fundamentally from the rapid growth of human and livestock populations, and consequent degradation and destruction of natural habitats and from the excessive off-take by meat hunters. In addition, some parts of Africa are now almost completely devoid of large wild animals because of uncontrolled slaughter during recent civil wars. The wildlife of substantial areas of the sahelo-Saharan zone has been senselessly annihilated by motorized hunting parties.

Key areas have been identified for the conservation of representative antelope communities. These show a high degree of overlap with the conservation requirements of other groups of larger mammals. Most of these areas have been included by African governments in their gazetted protected-area systems, and opportunities for the establishment of major new protected areas are very limited or non-existent in many countries. Hence Africa's key wildlife areas are generally well defined and there is little point in further debating the adequacy of the existing protected-area network for larger mammals. The key challenge facing antelope conservation in Africa is improvement of the conservation status of identified key areas and populations. At present, levels of protection and management of many of these areas are low or non-existent and their wildlife populations are depleted, in some cases severely. This reflects factors such as lack of political commitment to conservation and declining budgets of government wildlife agencies.

By far the greatest international contribution to the conservation of antelopes and other African wildlife is through external donor support to major wildlife areas, including development of the capacity of the wildlife agencies responsible for these areas and development of community-based conservation projects. This support is at an historically high level, but the long-term success of wildlife conservation will also depend on greater political commitment to conservation at the national and local level in many African countries. Greater recognition of wildlife conservation in national and regional development plans is often a critically important requirement.

Most antelope species still exist in large numbers in sub-Saharan Africa. Half of the species considered by the Specialist Group are estimated to number at least in the hundreds of thousands and 85% in the tens of thousands or more. Despite this superficially favorable situation, up to three-quarters of the species are in decline. Most antelopes are subjected to increasing rates of fragmentation of their distributions and to reduction or extermination of local populations. If current trends continue, Africa will lose a substantial proportion of its remaining antelope populations during the 21st century. The proportion of antelope species in sub-Saharan Africa which is threatened (or extinct) is projected to double from its present level of about one-quarter to about one-half in the next 25 years. Reversal of this trend will depend on greater realization of the economic potential of wildlife, e.g., through game-viewing tourism and international trophy hunting. The private sector may play an increasingly important role in the successful conservation of many antelope species.

Rod East, Co-chair
Antelope Specialist Group

African Elephant Specialist Group

Since late 1998, the compilation of the update of the African Elephant Database has been a major undertaking of the Data Review Task Force and the Program Officer of the African Elephant Specialist Group. At long last, the document was published in December 1999.

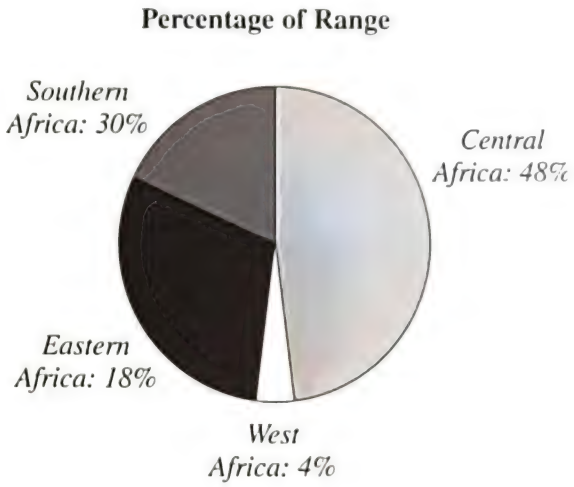
Updates Since the 1995 Publication of the African Elephant Database

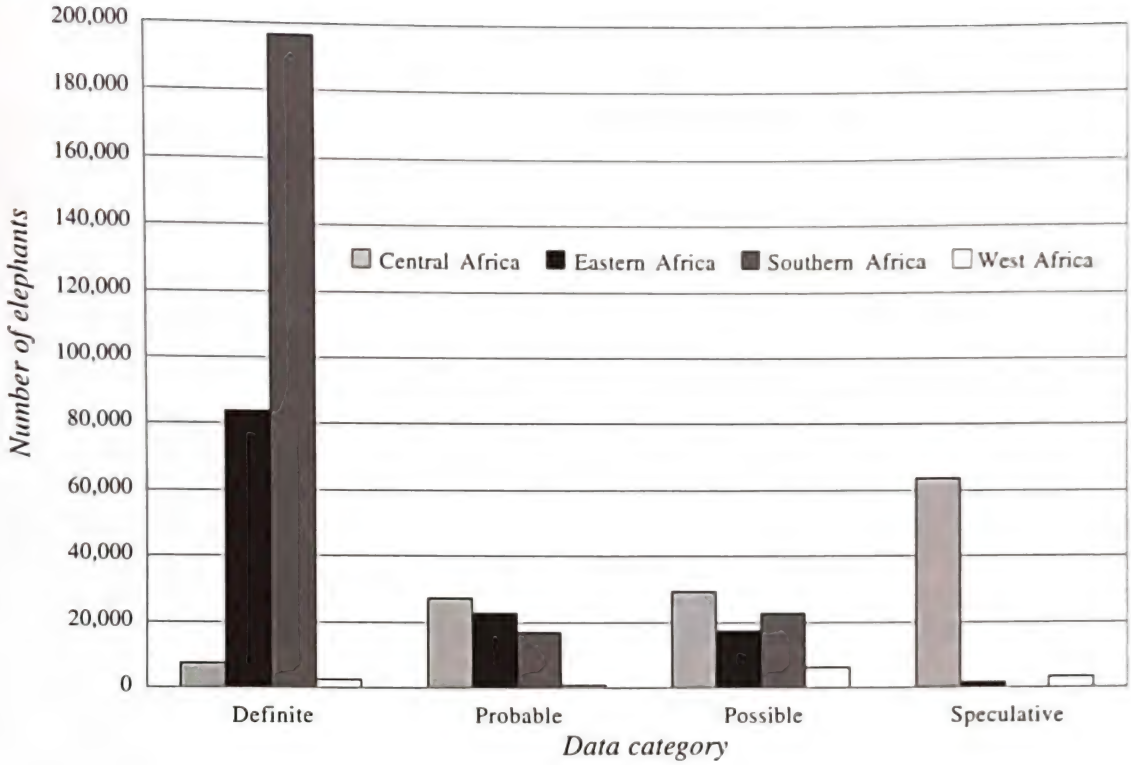
For several countries, comprehensive updates on numbers have not been possible because of political strife or total lack of resources. For some countries, only corrections to existing estimates were received. In other countries, updates have only been received for a small portion, or sub-populations, of previously recorded populations. Post-1995 updates or corrections to existing data for elephant populations and/or range, were obtained for the following 30 out of the 37 range states: Central Africa: Cameroon, Central African Republic, Chad, Democratic Republic of Congo, Equatorial Guinea, Gabon; Eastern Africa: Eritrea, Ethiopia, Kenya, Rwanda, Tanzania, Uganda; Southern Africa: Botswana, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe; West Africa: Benin, Burkina Faso, Ghana, Guinea, Ivory Coast, Mali, Niger, Nigeria, Senegal, Togo.

The remaining seven, Congo, Somalia, Sudan, Angola, Guinea Bissau, Liberia, and Sierra Leone, produced no updates. Changes in national estimates since the 1995 update do not necessarily reflect true population change; more often, improvement in survey techniques has lead to better estimates or to new estimates being produced in areas previously surveyed and unsurveyed. New estimates for some unsurveyed areas are based on informed guesswork. For more than one-third of the range states, the estimates are derived mainly from guesswork.

Continental Overview

Among the most critical problems facing elephant conservation in Sub-Saharan African countries are the lack of financial resources and growing human populations. Expanding agricultural activities increasingly cause degradation and destruction of elephant habitat. This is most evident in West Africa, which is equal in size to the other regions, but has the most fragmented elephant range: only 4% of the sub-region are considered to be elephant range. Further examination of range shows that while 48% of elephant range for Africa (2,772,397 km^2) can be found in Central Africa, this region has the lowest percentage (10%) of protected range. Conversely, West Africa has the smallest area of elephant range (212,463 km^2), but almost 40% (82,992 km^2) is protected.





Most populations in the Definite category are found in southern and eastern Africa. There is a very large difference between savanna and forest habitats in the proportion of Definites.

The low number of Definite estimates for Central Africa stems from the fact that the subregion is largely forest habitat. The high proportion of Possible and Speculative estimates for Central Africa highlights the need to improve estimates for this region because they may account for a large percentage of the remaining elephants on the continent.

While it is not recommended to make direct comparisons between the overall continental estimates provided in Said et al. (1995) and the current database, it is noteworthy that the total number of elephants in the Definite category has increased, even though the Probable and Possible estimates have decreased. This is mostly a reflection of more accurate aerial survey estimates in some countries, especially in southern Africa. On the other hand, the total removal of estimates from the Democratic Republic of Congo, and the downgrading of other estimates (e.g., in Gabon), have reduced the total estimates in the Probable and Possible categories while those in the Speculative category have increased. The box below shows the continental estimates.

Number of Elephants on the Continent

Definite:	301,773
Probable:	56,196
Possible:	60,780
Speculative:	68,596
Total area (km^2):	22,617,267
Range area (km^2):	5,772,466

Source: Barnes et al. 1999

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Canid Specialist Group

Specialists Meet in Ethiopia to Chart the Future for the Imperilled Ethiopian Wolf

More than 60 people from seven countries interested in protecting the Ethiopian wolf met in Dinsho, Ethiopia to develop a conservation strategy to help save the species from extinction. With fewer than 500 adults surviving, the critically endangered Ethiopian wolf is the rarest wild canid species in Africa. These elegant, long-legged red wolves survive only in a handful of mountain pockets; the largest population (200-250 animals) is found in the Bale Mountains National Park, with smaller populations in Arsi (Galama-Chilalo), North Shoa (Menz), North and South Wollo, and Gondar (Simen Mountains and Mount Guna). The Ethiopian wolf, also known as the Simien fox, the Simien jackal, and the *ky kebero,* is one of many wildlife species found only in the Ethiopian highlands. It is threatened by habitat fragmentation caused by agricultural expansion, disease, and hybridization with domestic dogs.

Organized by the Ethiopian Wolf Conservation Program, the Ethiopian Wolf Conservation Strategy Workshop's primary goal was to raise national awareness of the plight of the Ethiopian wolves and the need to conserve them, and to seek ways through research, management, education, and local involvement to protect effectively these endangered animals and their Afroalpine habitat. The main output of the workshop is to form the foundation of a national conservation strategy for this species, which will link relevant institutions and funding agencies at local, regional, national, and international levels. While the main focus of the workshop was on the Ethiopian wolf, participants agreed that there is a need for a centralized policy for wildlife management and conservation in Ethiopia. Two workshops were recommended for national and regional conservation planning and building technical capacity for conservation of all Ethiopian wildlife.

The participants to the workshop were drawn from the Federal Government, Amhara and Orominia Regional States, national and international scientists, NGOs, and representatives of the local communities from all areas where wolf population occur: Wollo, Gondar, Shoa, Arsi, and Bale. The workshop was sponsored in both Amharic and English, and was conducted jointly with WildCRU (Oxford University), the IUCN Canid Specialist Group, and the IUCN Conservation Breeding Specialist Group, with generous support from the Born Free Foundation (UK), and the Zoological Society of San Diego and Cincinnati Zoo through the Canid Taxon Advisory Group of the American Zoo and Aquarium Association (USA).

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Caprinae Specialist Group

Workshop on the Taxonomy of Mountain Ungulates

The Caprinae Specialist Group is organizing a workshop on the conservation implication of taxonomy for the world's endangered caprinae taxa. This workshop will be held in Ankara, Turkey, in May 2000. A better understanding of taxonomy was recognized as a priority in the 1997 Caprinae Action Plan and this workshop is a step in the implementation of the plan's recommendations. Poor knowledge of taxonomy hinders the conservation of mountain ungulates because it is impossible to protect taxa that cannot be properly identified. Reintroduction programs may use the "wrong" animals, and some taxa may go extinct before they are recognized as being different. Trophy hunting of mountain ungulates can in some cases be an important source of revenue to foster conservation, but in the absence of a good taxonomic classification one risks allowing hunting of endangered taxa or preventing hunting of taxa that could sustain some harvest. Conservation laws are difficult or impossible to enforce when threatened taxa cannot be identified. For example, there are some CITES-listed sheep subspecies that are very difficult to identify. This causes problems for customs officers. A clarification of the taxonomy of Asiatic sheep and goats is a particularly urgent objective of the Caprinae Specialist Group, which wishes to promote contacts and collaborations among taxonomists, field workers, and local conservation organizations with access to wild populations.

The goals of this workshop are:

1. Update the current status of taxonomy of mountain ungulates.
2. Identify knowledge gaps, particularly those most relevant to conservation.
3. Provide a forum for an exchange of ideas about caprin taxonomy and conservation.
4. Foster the establishment of collaborations among researchers to promote future research and conservation efforts.

For those taxa for which a consensus exists, following this workshop the Caprinae Specialist Group will produce a guide to the identification of the world's mountain ungulates that will be useful for customs officers, field biologists and national and international conservation organizations.

The workshop will include four invited presentations to summarize various aspects of Caprin taxonomy and contributed oral and poster presentations on recent research results. Titles of these presentations, topics to be discussed, and likely participants are posted on the workshop's web page http://callisto.si.usherb.ca:8080/caprinae/iucnwork.htm

Because we are mostly interested in constructive contributions to discussions, we may limit the number of oral presentations so that they could all be accommodated in the first day of the meeting. Rather than just a scientific review of the current "state of knowledge" of Caprin taxonomy, we hope this meeting will provide a frank exchange of ideas and guidance for future directions in research and conservation of wild sheep, goats and their relatives. Our goal is to build for the future rather than reflect on the past. Therefore, if you are interested in caprin taxonomy and conservation we strongly encourage your participation, regardless of whether or not you will present a talk. We have received financial support from the IUCN Peter Scott fund, the International Foundation for the Preservation of Wildlife, and from other sources. We are currently looking for more sponsors to facilitate the participation of graduate students and of researchers from countries with endangered taxa of Caprinae.

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Caprinae Specialist Group
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SSC/WPA/BirdLife Cracid Special Group

The Cracid Specialist Group (CSG) has held a number of different symposia over the last two decades. The primary purpose of these important meetings was to examine detailed reports and updates on Cracid status, distribution, and conservation. Just as important, workshops provide a forum to communicate openly and effectively about several topics relating to Cracid research and conservation.

In October 1999, CSG held a regional workshop focusing on South America's southern cone (southern Bolivia and Brazil, Paraguay, and Argentina) co-coordinated by Dan Brooks and Rob Clay, and held in Asuncion, Paraguay in conjunction with the IV International Congress on Wildlife Management and Conservation in the Amazon.

Immediately following this meeting, a joint CSG–Partridge/Quail/Francolin Group (PQFG) Symposium on Conservation and Management of Neotropical Galliformes took place in October 1999, with the Cracid section co-coordinated by Brooks and Fernando Gonzalez-Garcia. This meeting was co-hosted with PQFG's John Carroll and held in Monterrey, Mexico in conjunction with the 6th Neotropical Ornithology Congress.

The first half of the Paraguay symposium contained several talks on Cracids. These included:

- Winter diet of the dusky-legged guan (*Penelope obscura*) in the lower Rio Parana delta of Argentina (J.A. Merler, M.A. Diuk-W., R.D. Quintana, and M.P. Bertolini).
- Evaluation of population density of "Charatas" (*Ortalis canicollis*) in Izozog, Provincia Cordillera, Dept. Santa Cruz, Bolivia (A.M. Mamani).
- A revision of the status and ecology of the black-fronted piping guan (*Pipile jacutinga*) in Paraguay (R.P. Clay, A. Madrono and J. Lowen).
- Status of galliformes in eastern Paraguay (R.P. Clay).

Most of the Mexico Symposium contained several talks on neotropical galliformes. These included:

- Overview of QPFG's involvement with neotropical quails research and conservation (J.P. Carroll).
- Current status, dietary preferences, and perspectives for the sustainable management of crested bobwhite (*Colinus cristatus*) in Venezuela (E.M. Perez).
- Status, natural history, and conservation of the bearded wood-partridge (*Dendrortyx barbartus* Gould 1846) in Veracruz and Oaxaca, Mexico (S. Aguilar-R. and H Corzo-A.).
- Status of bearded wood-partridge (*Dendrortyx barbartus*) (J. Clinton-E, J.P. Carroll, S. Aguilar-R., V. Gonzalez, A. Aragon, R. Pedraza and J.T. Baccus).
- Abundance of the long-tailed tree-quail (*Dendrortyx macroura*) in managed and unmanaged pine-oak forests (G. Chavez-L.).
- Recovery of the masked bobwhite in Sonora and Arizona (W.P. Kuvlesky Jr, F.S. Guthery, S.A. Gall, G. Camou-L., R. Engel-Wilson, J. Fimbres-P, F. Ibarra-F, S.A. DeStefano, T. Solis-H, W.W. Shaw and R.A. Steidl).
- Status and conservation of cracids in Mexico and Central America (F. Gonzalez-G., D.M. Brooks and S.D. Strahl).
- Status of the horned guan (*Oreophasis derbianus*) in the field and captivity (F. Gonzalez-G.).

- Populations status and conservation of the Cozumel Island Curassow (*Crax rubra griscomii*) (M.A. Martinez-M.).
- Individual, seasonal, and daily variation in the diet of a familial group of black curassows (*Crax alector*) (Jimenez, M. Escano, X. Bernal, J. Foreno and C.A. Mejia).
- Conservation genetics of *Crax blumenbachii* (S.L. Pereira and A. Wajntal).
- Surveys and conservation of cracidae and odontophoridae along two altitudinal transects of the Colombian Andes (P.G.W. Salaman, A.M. Cuervo and T.M. Donegan).

Two posters were also presented:

- Habitat of *Odontophorus colombianus* in Venezuela (E.B. Bonaccorso).
- Distributional patterns of the family Odontophoridae in Mexico (Gordillo-M.).

Both symposia concluded with round-table discussions, convening as working groups engaged in open, dynamic discussion. We began by introducing ourselves and our interest in neotropical galliformes.

The majority of the workshop participants in Paraguay were from central South America and the southern cone. Many of the topics discussed revolved around a captive breeding theme (e.g., ranching to reintroduction), because most of the participants had captive-breeding backgrounds. However, future projects were identified as well.

At the neotropical galliforme workshop in Monterrey, 26 people were present total, hailing from: Mexico (11), Colombia (7), Venezuela (3), Brazil (2), USA (2) and Peru (1). Topics discussed included communication, funding, coordination, and reintroduction, among other agenda items.

A book comprising these two symposia is in the works, co-edited with QPFG, and therefore covering all neotropical galliformes, rather than only cracids. The title will be *Biology and Conservation of Neotropical Galliformes in the New Millenium*, and it will comprise manuscripts from the symposium in Mexico, some manuscripts from workshops in Bolivia, Paraguay, and some invited manuscripts.

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Crocodile Specialist Group

Problems of Success: Conservation Consequences of Crocodile-Human Conflict

In many countries, crocodile populations have benefited from several decades of reduced commercial hunting as a result of national protection and the strict controls on international trade imposed by CITES. As a result, some crocodile populations have increased in numbers, expanded their range back into historically occupied areas, and the number of larger individuals has increased. At the same time, humans continually expand into crocodile habitat. This has led to increasing conflicts between crocodiles and people and their livestock. Living with large predators is a problem that conservationists in the developed world rarely face. In tropical wetland areas, crocodiles historically reached high densities and were major predators. By returning crocodiles to their former abundance, we have resurrected an old and dangerous predator of people—an unexpected result of conservation success.

Recent reports from many countries indicate that crocodile attacks on people are perceived to be increasing to unacceptable levels. Reports of crocodiles attacks have come in from Tanzania, where several attacks are reported each year; from Zambia, Kenya, India, Costa Rica, and Jamaica, which recorded an increase in the number of fatal attacks; and from a tourist resort in Cancun, Mexico. Sarawak, Malaysia consistently reports attacks by large saltwater crocodiles in the rivers. Parts of the USA and Australia, which have large populations of humans and crocodiles, report growing concern and the need for active control measures. In general, only the larger and fiercer species are involved in these attacks. The Nile crocodile (*Crocodylus niloticus*) and the saltwater crocodile (*C. porosus*) are considered most dangerous, but recent attacks resulting in human deaths are reported for American crocodiles (*C. acutus*), Morelet's crocodile (*C. morletii*), Mugger (*C. palustris*), and American alligator (*Alligator mississipiensis*). Human fatalities are usually the result of attack by crocodilians 3 m or larger. Due to the sexual dimorphism of crocodilians, we can tell the attacks are usually by large males. Non-fatal interactions can also be serious to local people as can predation on livestock. In Togo, rare narrow snouted crocodiles (*C. cataphractus*) are undermining water retention ponds with their burrows and threatening development of much needed clean water supplies for humans.

Crocodile attacks on humans are tragedies, particularly when the result is the death of a child, as is often the case. They are also a serious conservation issues. The usual response of people to a crocodile attack is to kill the most obvious large crocodile present. Ecological studies by CSG members confirm that a proportion of large adults can be removed from a population without causing population decline. The sustainable level of removal varies with species and situation, but falls between 5% and about 15% of adult crocodiles and so we can endorse regulated control measures. Of more concern is the fear and hatred of crocodiles that can lead to calls for complete extirpation of local crocodile populations. Human intolerance for a large predator that eats their children and valuable livestock will understandably override protective legislation or conservation concerns.

The Crocodile Specialist Group is taking a serious approach to this issue. Future crocodilian conservation success may depend on generating solutions to human-crocodile conflicts. The experience of several countries with long term programs to address the problem is instructive. In Florida, nine fatalities are on record since the 1930s but non-fatal attacks by alligators are an annual occurrence. A statewide program designates official "nuisance alligator trappers" for each county. These are often individuals formerly active in alligator hunting. Nuisance trappers remove and kill about 5,000 alligators a year, which were

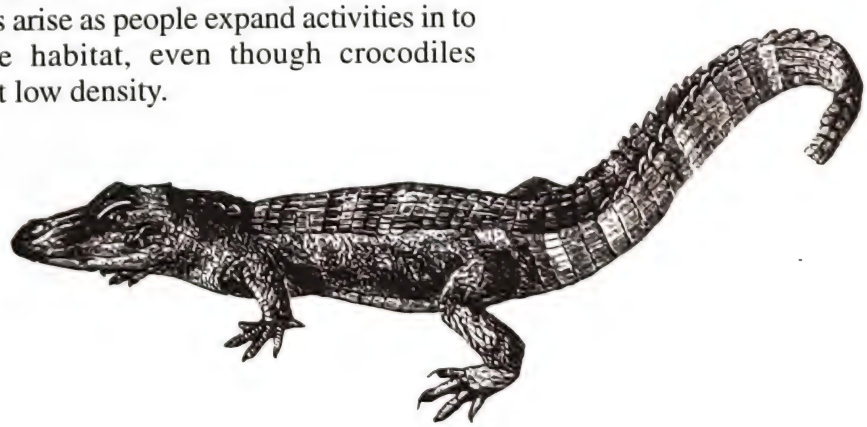
reported to State authorities by the public. Trappers legally sell the skins and meat to repay their costs and support the program. An active public relations program continually advises the public of the need for caution in alligator habitat, feeding alligators is illegal, and high-risk locations are prominently sign posted. The combination of these efforts has created an atmosphere of tolerance for alligators and a general understanding that the real risk of alligator attack is much less than the danger posed by many other common activities, like sports, boating, driving, etc. Nevertheless, the occasional fatality still causes hysterical reaction, swift vengeance on the alligator, and the need for careful and sensitive statements by conservation authorities.

In northern Australia, the city of Darwin surrounds an extensive estuary, Darwin Harbor, that used to support a substantial population of saltwater crocodiles. Recognizing the incompatibility of this particularly fierce crocodile within a large urban area, the authorities have quietly declared Darwin Harbor a crocodile free zone and an aggressive trapping program attempts to remove all crocodiles. This program occurs in the context of a territory wide program that has promoted the recovery of the crocodile population to pre-exploitation levels—an estimated more than 50,000 adults. It includes an effective egg collection and ranching program and annual population monitoring. In the Cairns region of northeast Queensland a three year trial crocodile removal program has been implemented. The area is renowned for its swimming beaches and problems arise as people expand activities in to crocodile habitat, even though crocodiles remain at low density.

Unfortunately these programs are the exception, and in most locations crocodile attacks remain a growing problem that authorities are poorly equipped to deal with. Conflicts between outcries for the removal of crocodiles and calls to protect these "endangered" species complicate official action. The elements of successful mitigation of crocodile-people conflicts can be discerned among the current programs: Realistic appraisal of the effects of removal of problem animals based on population monitoring; sensible decisions about locations where large crocodile populations are and are not appropriate for public safety; effective control of nuisance crocodiles; effective public information to explain both the real hazards and the control program; modification of people's behavior to minimize risk (e.g. washing, drinking, and swimming at the water side); and a system to provide financial support for control activities and a public relations campaign to reassure the public.

The Crocodile Specialist Group will hold a special symposium on this topic at its 15th Working Meeting in Varadero, Cuba, in January 2000 to assemble the available information on both the problem and the solutions and develop recommendations and guidelines for general use. When crocodiles and people can live together with minimal conflict, crocodile conservation can succeed.

Perran Ross, Executive Officer
Crocodile Specialist Group



Deer Specialist Group

The Deer Specialist Group (DSG) continued implementation of its action plan in South America. Progress reports were received from four of the five projects funded by small grants in 1998. In October, Susana Gonzalez and Mauricio Barbanti Duarte convened a week-long workshop on the Conservation of Neotropical Deer at the Fourth International Congress of Wildlife Management in the Amazon and Latin America. The meeting, which took place in Asuncion, Paraguay, was an attempt to update the conservation status of deer in the region. To examine population status within and outside of protected areas, the thirty participants were divided into four regional working groups. The results will be published in the proceedings of the meeting. The meeting also afforded the DSG an opportunity to plan a future training workshop in Bolivia.

A second workshop on large mammal population census methods was conducted by Bill McShea, Walfrido Tomas, and Guilherme Mourao in Brazil in November. The venue was the Nhumirim Ranch used last year, and the Estancia Rio Negro located five hours away by vehicle. Of the twelve participants, six were Brazilians, three Bolivians, two Argentinians, and one American who is studying in Brazil. The course presented information and field exercises on sampling methodology, statistical concepts and terminology, surveys (transects, auto-based, and aerial), and abundance indices using camera traps and track surveys. The course was also able to fund ten hours of flight time, which allowed a survey of marsh deer on the ranch. To maximize hands-on experience, field work was not restricted to deer. Caiman and cattle were used as models for capture/recapture methods and strip transects. Small grants for field surveys were awarded to Angela Maria Nunez Quiroz (Bolivia), Humberto Gomez Cervero (Bolivia), and Guilherme Henrique Braga de Miranda (Brazil).

Bill McShea replaced Michael Green as Deputy Chair of DSG, while Green continues as Regional Coordinator for Mainland Asia. McShea attended an international workshop on Ungulate Ecology and Management in Alberta Canada in August. In addition to presenting work on white-tailed deer and ecosystem interactions, he presented a poster on DSG activities and distributed informational brochures and DSG Action Plans to meeting participants.

U Myint Aung, warden of Chatthin Wildlife Sanctuary, Myanmar, spent four months at the Conservation & Research Center analyzing and interpreting data on Eld's deer ecology, gathered by his staff during the past five years. The information will be used for his M. Sc. thesis, and will be submitted for publication. In April, a Community Relations Course was conducted at Chatthin Wildlife Sanctuary. It was the ninth training event given at the sanctuary since the biodiversity conservation program commenced there in 1994. The instruction team included anthropologist Chris Duncan (Smithsonian), conservation biologist Teri Allendorf (University of Minnesota), educator David Jenkins (National Zoo, Washington D.C.), and Chris Wemmer (DSG Chair). The class comprised 21 protected area staff, including three ethnic Chins from Natmataung National Park. Chatthin, with an Eld's deer population of 2000, is the last stronghold of the species in Asia. It is also attended by many park-people conflicts. Nineteen villages border the park, and three are located within its boundaries. Information was gathered from villagers on attitudes toward the park, agricultural land use, and forest product extraction, and improvements were made to the education center in the village of Chatthin. The course ended with three survey teams and one education team in place, and four projects underway.

A proposal to fund DSG activities, and Action Plan implementation in particular, was completed in the fall and will be marketed to gain corporate support in 2000. A roster of granting groups will also be provided to all members to support their efforts to implement the DSG Action Plan.

Chris Wemmer, Chair
Deer Specialist Group

Equid Specialist Group

A symposium on the Biology and Conservation of Equids was held at the Euro-American Mammal Congress in Santiago de Compostela, Spain in August 1998. Talks were given on phylogeny and conservation genetics of the genus Equus (Ann Oakenfull and Oliver Ryder); equid taxonomy (Colin Groves); reproduction in equids (Cheryl Asa); the role of the hindgut as a water reservoir (Amiram Shkolnik, Hadas Kasirer, Itzhak Chashniak); mother-young relationships in feral horses and their implications for the function of development in mammals (Cassandra Nunez and Dan Rubenstein); the status, distribution, ecology, and social structure of Gobi khulan (*Equus hemionus luteus*) in Mongolia (Claudia Feh); behavior of reintroduced takhi (*Equus ferus przewalskii*) pre- and post-release into the Hustain Nuruu Steppe Reserve of Mongolia (Lee Boyd); the ecology and conservation of the African wild ass (*Equus africanus somaliensis*) in the horn of Africa (Patricia Moehlman); and feeding habits of the Iberian wolf (*Canis lupus*) on free ranging horse herds in Galicia, Spain (Pedro Alonso, F.de la Torre, P. Sierra, M. Agullo, and M. Snachez). During the Congress we had a meeting of the Equid Specialist Group and each species coordinator presented a summary of current needed actions for equid conservation. The group as a whole discussed these actions, identified actions that were common to all species, and started to prioritize action needed for wild equids in general. During this meeting we also discussed equid genetics and reintroduction issues concerning the Przewalski horse in Mongolia. It was the first time that many of the members had met and we were able to discuss a range of issues concerning equid research and conservation.

The new Equid Action Plan is in the final draft stage and will be completed in early 2000. The chapters on species will provide new information and ideas on how to prioritize and activate conservation on threatened and endangered equids in their native habitats. The sections on population genetics, disease epidemiology, and spatial-dynamic ecosystem modeling will provide conservation and research practitioners with new paradigms.

Funding has been obtained for research and conservation on the African wild ass in Eritrea (WPTI) and Somalia (St. Louis Zoo). Funding was obtained for research on potential competition between Plains zebra and Grevy's zebra on the Laikipia Plateau, Kenya (St. Louis Zoo).

Fanuel Kebede, a biologist with the Ethiopian Wildlife Conservation Organization, has completed his M.Sc. on African wild ass ecology and conservation in the Danakil Desert. He was funded by the Equid Specialist Group, WPTI, and the British Council. Hagos Yohannes, Head of the Eritrean Wildlife Sector, will begin work on his M.Sc. in Fall 2000 with funding from the Equid Specialist Group and WPTI.

A Grevy's zebra poster has been produced and is being distributed in Kenya. Two thousand postcards of African wild ass were produced and are being distributed throughout the species range. An African wild ass poster has been produced for Eritrea and is being distributed to government offices and all secondary schools.

Patricia D. Moehlman, Chair
Equid Specialist Group

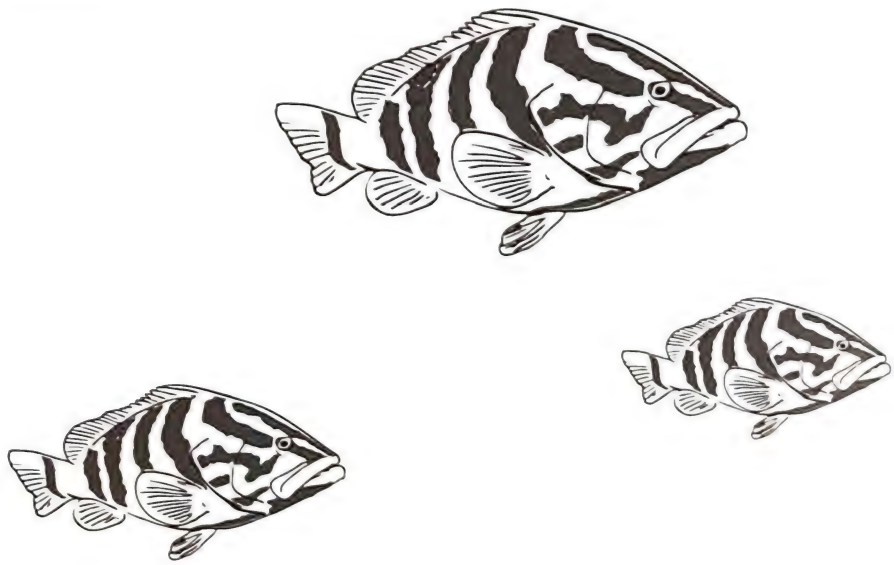
Groupers and Wrasses Specialist Group

A new Specialist Group has been established to work on two families of reef fishes that are being heavily impacted by fishing and habitat damage—the *Serranidae* and *Labridae*. Several species from these families have already been included on the *1996 IUCN Red List*. They represent about half of all commercially important marine species listed.

One of the first tasks of this new Specialist Group will be to review the status of other species in these two families and to launch a newsletter. A meeting of the Specialist Group is being organized for 2000, at the American Society of Ichthyologists and Herpetologists annual meeting in Mexico.

For information on this group please contact Yvonne Sadovy, Associate Professor, Department of Ecology and Biodiversity, University of Hong Kong, Pok Fu Lam Road, tel: 852-2859-8977, fax: 852-2517-7997, e-mail: yjsadovy@hkusua.hku.hk.

Yvonne Sadovy, Chair
Groupers and Wrasses Specialist Group



Marine Turtle Specialist Group

The growing interest of governments and resource managers to collaborate regionally on marine turtle conservation and management has enormous potential to promote the recovery of depleted or declining populations. Regional efforts are underway in many areas, and during the last year the Marine Turtle Specialist Group (MTSG) and its members have participated in regional workshops.

Jacques Fretey assisted the Convention on Migratory Species (CMS) in organizing several regional workshops in West Africa, an area with important but incompletely surveyed marine turtle populations. In May 1999 representatives from 17 countries, extending from Mauritania to Namibia, concluded a "Memorandum of Understanding concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa" in Cote d'Ivoire under the auspices of CMS. To date, 12 countries have signed this historic agreement to reverse the decline of marine turtles along the west coast of Africa and promote their conservation.

Significant regional conservation efforts are also underway in the Indian Ocean. Biologists from around the region participated in the Second ASEAN (Association of Southeast Asian Nations) Sea Turtle Symposium in Kota Kinabalu, Malaysia in July. In October the Government of Australia hosted a formal meeting in Perth, with government representatives from 23 nations. The MTSG provided technical expertise for the meeting, with Colin Limpus serving as the Chair of the expert panel. Participants supported the development of a Regional Agreement on the Conservation and Management of Marine Turtles and Their Habitats in the Indian Ocean and Southeast Asian Region. Negotiations for this agreement are scheduled to begin in June or July 2000.

In November the MTSG, WWF, Wider Caribbean Sea Turtle Conservation Network, and the UNEP Caribbean Environment Program co-sponsored a meeting entitled, "Marine Turtle Conservation in the Wider Caribbean: A Dialogue for Effective Regional Management." Hosted by the Government of the Dominican Republic, the meeting was attended by government delegates from 27 countries and territories in the Wider Caribbean. Participants identified regional management needs and developed a series of recommendations to foster collaboration and cooperation. The Inter American Convention for the Protection and Conservation of Sea Turtles and the SPAW (Specially Protected Areas and Wildlife) Protocol of the Cartagena Convention are expected to come into force in 2000; regional conservation and management will be necessary to implement these agreements.

MTSG Chair Alberto Abreu Grobois has appointed four Regional Vice Chairs—Dimitris Margaritoulis for the Mediterranean and NE Atlantic; Saif Al-Ghais for the Arabian Sea and Western Indian Ocean; Colin Limpus for Australasia; and George Balazs for the Pacific Islands. Jeanne Mortimer and Deborah Crouse have been appointed Chairs of the newly constituted Hawksbill and Red List Task Forces, respectively.

The MTSG 's opus, *Research and Management Techniques for the Conservation of Sea Turtles,* has been published. More than 100 individuals from around the world contributed to its production, which provides guidance for resource managers, biologists, and others working with marine turtles. Forty-two chapters are organized under seven major sections: Overview; Taxonomy and Species Identification; Population and Habitat Assessment; Data Collection and Methods; Reducing Threats; Husbandry, Veterinary Care, and Necropsy; and Legislation and Enforcement. Spanish and French editions will be published in 2000.

The MTSG thanks the Center for Marine Conservation for its logistical, administrative, and programmatic support. We are also grateful to our very special anonymous donor for her continuing financial and moral support.

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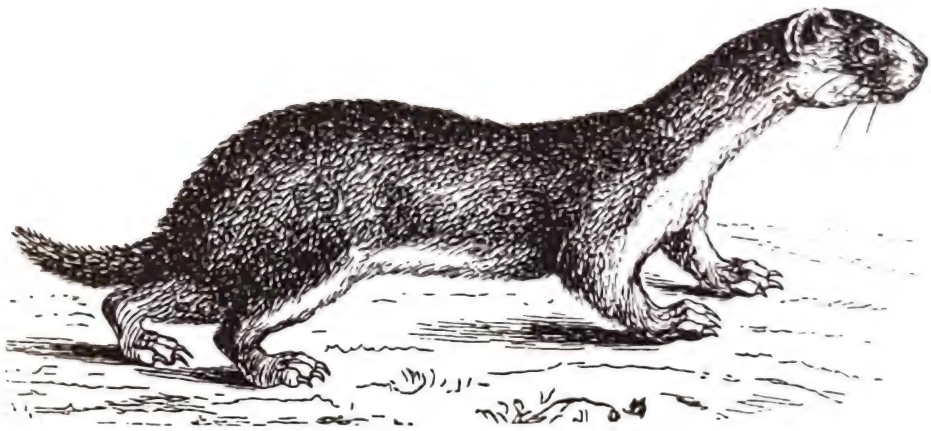
Otter Specialist Group



Several regional meetings in 1999 were used to accelerate the progress of the work of the Otter Specialist Group (OSG). Many European OSG members participated in otter workshops held during the Third European Congress of Mammalogy at Jyväskylä, Finland. OSG members also participated in the 18th Mustelid Colloquium held at Zeilern, Austria. The Asian OSG Secretariat, together with the Otter Research Group (Japan), the National Taiwan University, and the Tung-Hai University organized a workshop on Conservation and Public Awareness of Otters at Taichung in December. The European section continued the establishment of a Reintroduction Advisory Committee for which University of Bremen prepared a legal opinion for the preconditions for a release of otters in the light of EU and international law. The European section also cooperates with *Aktion Fischotterschutz* in preparation of a European Otter Habitat Network, which was inaugurated at the end of 1998 and made good progress in 1999. Establishment of a studbook for the giant otter forges ahead and preparation of husbandry guidelines for the Eurasian otter and revision of the second edition of husbandry guidelines for the North American river otter are nearing completion.

The year 2000 will be a very busy for OSG. It is planned to finish revision of the 1990 Otter Action Plan. A workshop "How to implement the Otter Action Plan?" is planned for November 2000 at the German Otter Center. This will help to ensure an optimal implementation of the new action plan. Preparation of the 8th International Otter Colloquium, planned to be held in January 2001 in Chile, will need great efforts. Hopefully the proceedings of the 7th Colloquium, held in 1997 in Trebon, Czech Republic, will be published by then.

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Wolf Specialist Group

Wolf conservation in Europe received a big boost in December. A plan for the conservation of five large European carnivores, including the wolf, was approved by the Standing Committee of the Bern Convention, which is administered by the Council of Europe. The council is comprised of all European countries, including Russia and the European Union. The Committee also approved establishment of an ad hoc group of experts on large carnivores to administer the plan and monitor populations at national levels, and to advise on technical aspects of large carnivore conservation in Europe. The first meeting of the large carnivore group will be held in Norway in June 2000. Wolf Specialist Group members were instrumental in developing the wolf plan.

The Wolf Specialist Group will meet in February 2000 at the International Wolf Symposium in Duluth, Minnesota, USA. The Symposium, expected to draw 700-800 attendees, is sponsored by the International Wolf Center, and is a project of the Wolf Specialist Group members.

L. David Mech, Chair
Wolf Specialist Group

Australasian Plant Specialist Group

Australasian Plant Specialist Group (APSG)/ Australian Network for Plant Conservation (ANPC)

"Promotion, Practice and Partnerships" was the theme of the Fourth Biennial Australian Network for Plant Conservation Conference, held in Australia in late November. The ANPC, an international partnership of stakeholders in plant conservation from government, industry, research, and community, was reflected well in the conference program.

The focus of the conference was on bringing the outcomes of research to practitioners and showcasing practical projects in plant conservation. Themes were chosen to challenge delegates on pressing areas in conservation, such as conservation of non-vascular plants, the "forgotten flora," and conservation and restoration of ecological communities and ecosystems.

Kingsley Dixon, Director of Plant Science at Kings Park and Botanic Garden, Perth, and President of the ANPC, highlighted the need for scientists to be relevant to the conservation community in their research and to bring outcomes to practitioners. He also recommended that practitioners actively form partnerships with scientists to promote the vital two way flow of information. The APSG/ANPC's crucial role in achieving this was emphasized.

David Given, Chair of SSC's Plant Conservation Subcommittee and ANPC Vice-President, brought an international perspective with his keynote paper. He discussed global strategies such as the SSC Plant Conservation Program for 2000-2005 and the importance of conservation networking.

The international links were furthered by Lucy Sutherland, representing Botanic Gardens Conservation International, who brought delegates up to date on the new International Agenda for Botanic Gardens in Conservation, being formulated through a world-wide consultative process.

Sessions and Recommendations

Papers were presented from a range of organizational backgrounds, including industry representatives like the National Herbalists Association of Australia, who explored the issues of the impact of the herbal medicine industry on the Australian flora, and called for close ties between the industry and plant conservation; and community groups like the Friends of Grasslands, who spoke of their efforts to conserve and raise the profile of one of Australia's most threatened ecosystems. Other papers came from botanic gardens, federal and state conservation agencies, and individuals with a personal interest in plant conservation.

The workshop sessions offered delegates the opportunity to shape ASPG/ANPC's future focus. Delegates endorsed the important role of ANPC regional groups in dissemination and application of science to on-ground projects and suggested they increase their involvement in providing training and strong regional networking, targeting regions which include biodiversity hotspots where there is little plant conservation action currently.

A workshop on Conservation and Restoration of Ecological Communities and Ecosystems recommended that ASPG/ANPC establish a working group to review existing restoration guidelines and accredit those which meet best practice in the area. ANPC would be grateful to hear of any existing guidelines..

It was also recommended that a module on restoration be added to the ASPG/ANPC Conservation Techniques Course.

In discussing conservation actions for non-vascular plants, it was recommended that a working list of Australian rare or threatened non-vascular plants be produced, similar to the existing list for vascular plants. This was originally proposed by Tom May of Royal Botanic Gardens, Melbourne, as a ROTAF list (Rare or Threatened Australian Fungi) but was considered to be such an important initiative that it soon expanded to cover all of the non-vascular plants.

The Research Into Practice session focused on the importance of translating the outcomes of science into practice. Continuation of the program of producing best practice guidelines, such as for *in situ* conservation and provenance, was considered an effective means of achieving these aims.

Finally, the importance of effective partnerships was highlighted by a series of papers on linking government, industry, and community, and overcoming the increasing problems of fragmentation. It was recommended that ASPG/ANPC coordinate the production of a set of guidelines on partnerships, and some of Australia's leading lights in forming partnerships have volunteered to collaborate on this.

Practical Techniques Workshops

A series of practical workshops provided practitioners with an unprecedented opportunity to tap into the assembled wealth of expertise, and offered an affordable and accessible option for local landholders and community conservation groups. Topics covered were the value and conservation of soil crust lichens, community mapping of fungi, plant propagation, and rare plant monitoring.

Field Trips

Some delegates enjoyed a three day guided tour of Kosciuszko National Park. Decades of restoration work there offer many valuable lessons for those seeking to undertake this resource-consuming activity. The value of linkages between soil scientists and plant conservationists was demonstrated by the field trip, as the restoration work requires knowledge of processes such as mycorrhizal associations in order for successful re-establishment of plant communities to occur.

APSG/ANPC's Recent Achievements

Training

The APSG/ANPC Plant Conservation Techniques Course was conducted in Tasmania in 1998 and was attended by participants and presenters from Australia, Hong Kong, and New Zealand. Eleven newly appointed Bushcare Officers attended as part of their induction training, and as did school teacher, farmers, and botanists. The course covered a wide range of topics, from assessing threats and rare plant survey to using smoke to germinate seed.

It has been suggested that the course so closely fits the SSC Plant Conservation Program's training objectives that it could be conducted overseas, perhaps as part of a larger package along with the International Diploma in Plant Conservation Techniques conducted by Royal Botanic Gardens Kew. If sufficient funds can be raised, it is also planned to sponsor attendance at Australian courses from surrounding countries, such as Indonesia. The ANPC has been discussing this with counterparts from the Indonesian Network for Plant Conservation (INetPC). This could have the flow-on effect of INetPC adapting the course to local needs, and conducting similar courses in Indonesia.

Promoting Best Practice

Best practice guidelines have been produced by APSG/ANPC working groups to guide practitioners in achieving good conservation outcomes in germplasm conservation and threatened plant translocations. These guidelines have been supported by the Australia and New Zealand Environment and Conservation Ministerial Council and adopted by a range of target users, including funding agencies assessing grant applications and government departments reviewing development applications. They are also being used as course texts by industry groups and international agencies.

For further information on the ASPG/ANPC, including publication orders, contact: Jeanette Mill, National Coordinator, Australian Network for Plant Conservation, GPO Box 1777, Canberra, ACT, 2601, Australia, tel: 61 2 62 509 509, fax 61 2 62 509 528, e-mail jeanette.mill@ea.gov.au, website http://www.anbg.gov.au/anpc.

Jeanette Mill, Chair
Australasian Plant Specialist Group

Conifer Specialist Group

In August, two important events for the Conifer Specialist Group and its work coincided. The publication of *Conifers: Status Survey and Conservation Action Plan* was officially launched at the Fourth International Conifer Conference, Conifers for the Future, held in August 1999 at Wye College, Kent, UK. This conference, attended by 160 delegates from 27 countries, was an excellent forum to present conservation issues. The last afternoon session was dedicated specifically to these. The compilers of the Conifer Action Plan, Aljos Farjon and Chris Page, gave a keynote address outlining the issues and presenting the findings contained within the Action Plan. IUCN and the printer had worked hard to make copies available for conference delegates. They were an assembly of specialists in taxonomy, horticulture and forestry of conifers who we would not soon see gathered in one room again. We are grateful to all involved in helping us to make this splendid occasion possible.

The Conifer Action Plan is the fifth SSC Action Plan on flora published to date. Four of these Action Plans cover taxonomic groups: Palms, Orchids, Cactus and Succulent Plants, and Conifers; one is geographically defined: Mediterranean Island Plants. Botanists still have a long way to go to match the number of SSC's animal Action Plans, some of which have already seen a second edition. This, surely, is a historical anomaly that needs correction by greatly accelerating the status survey and action planning for threatened plants. Ecosystems depend upon plants and animals. *In situ* conservation of plants, particularly trees, effectively means protection of forests (ecosystems) with all the animals in it.

The Conifer Action Plan is the first plant Action Plan to have almost completely surveyed all taxa within its remit (630 species, 800 taxa inclusive of subspecies and varieties) using the 1994 IUCN/SSC categories and criteria throughout. The number of species and their world-wide distribution made this a major and complicated task, performed in close collaboration with WCMC (World Conservation Monitoring Centre). No fewer than 25% of all taxa recognized—or 200—are threatened with extinction (CR, E, VU). Many of these belong to monotypic genera concentrated in "conifer hot spots," regions defined in the Action Plan with high diversity, endemism, and threats to species survival. We have formulated scientific criteria to short list species for urgent international conservation action; there are 43 of these in 27 genera that were short listed based on the criteria. Members of the Conifer Specialist Group have compiled detailed reports of ten of these, as well as regional reports on several of the "hot spots," presenting valuable information as well as proposals for conservation action.

There are admittedly deficiencies of the current Conifer Action Plan. With 38 members to tackle such a widespread and diverse group of organisms with so many different problems, we could not, despite several years work, get all the "hot spots" reported. Geographical bias of member representation is one problem, limited communication networks (despite our yearly newsletter) is another. We need more members in the countries where conifer diversity occurs, and we must assist them to find ways to actively gather the information needed to initiate national, regional, and local conservation actions. Let us hope this call will be answered so that we will be a stronger Specialist Group to continue our work into the 21st century.

Aljos Farjon, Chair
Conifer Specialist Group

Medicinal Plant Specialist Group

New Program Home at the Canadian Museum of Nature

The Medicinal Plant Specialist Group (MPSG) has established a new program office, hosted by the Canadian Museum of Nature (CMN). In September 1999, a Memorandum of Agreement was signed between the CMN in Ottawa, Canada, and the Species Survival Commission of the IUCN-The World Conservation Union. This agreement creates an institutional base for the MPSG within the Museum's Canadian Centre for Biodiversity.

The Canadian Museum of Nature is a Crown Corporation of the Government of Canada, and also hosts the Canadian Committee for the IUCN. The MPSG program office is located in the Natural Heritage Building of the Canadian Museum of Nature in Aylmer, Quebec.

This agreement will facilitate program development, institutional collaboration, and fundraising for the MPSG's global and regional activities related to identification and conservation of threatened medicinal plants. The MPSG program will be self-supporting, but will link with the CMN's Issues in Biodiversity project. Establishment of an MPSG website and development of a program proposal that will focus on regional Centers of Medicinal Plant Diversity and globally threatened species of medicinal plants are being coordinated from this office by the MPSG's Executive Secretary, Danna Leaman. For further information, please contact:

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- Uwe Schippmann, Chair, Medicinal Plant Specialist Group, Bundesamt für Naturschutz, Konstantinstrasse 110, D-53179 Bonn, Germany; tel: 49/228/8491-136, fax: 49/228/8491-119, e-mail: SchippmU@bfn.de

Uwe Schippman, Chair
Medicinal Plant Specialist Group

Palm Specialist Group

Update on the Status of *Pinanga bicolana:* a Critically Endangered Palm Species from the Philippines

Pinanga bicolana is a solitary palm reaching 3-4 m tall, with stem growing to 4 cm in diameter. It belongs to a distinct group within the genus *Pinanga* in bearing united sepals in pistillate flowers and broad pluricostulate leaflets that are glaucous on the undersurface and with deeply incised tips. The display of mottling in its leaves makes it an attractive palm for cultivation. This species is endemic to the Bicol National Park on Luzon Island, Philippines where it was discovered slightly more than a decade ago.

Between 1983 and 1990, a significant portion of the forest cover in the Bicol National Park was lost to shifting agricultural cultivation, firewood gathering, charcoal-making, timber poaching, and human settlements inside the park. Originally covering more than 52 km^2 of lowland evergreen rain forest, the park now retains a mere 10% of the original old growth forest. Much of the park is now covered with grass, small shrubs, and cultivated agricultural crops, with small trees found in gullies and tributaries. The park continues to be threatened by further conversion of forests into farming areas, transportation, and telecommunication infrastructure, and increasing illegal settlements inside the park boundaries.

During a visit to the park in October 1997, the remaining population of *Pinanga bicolana* was estimated to be less than 100 mature individuals. Most of these are growing near the banks of the Bahi and Napolidan Rivers. These few and scattered individuals make up what is probably the last viable population of this species in the wild. The species thus faces a high risk of extinction, with the continuing decline of its habitat, and is critically endangered under IUCN Categories of Threat.

Little is known about the demography and population dynamics of *Pinanga bicolana.* Studies should provide useful information in evaluating alternative *in situ* and *ex situ* management and conservation strategies for the species.

The Philippines' Department of Environment and Natural Resources and non-government organizations such as the Bicol National Park Foundation and Plan International-Bicol are implementing programs aimed at restoring vegetation and protecting whatever is left of the park's biodiversity and ecosystem values.

Outside of its natural range, *Pinanga bicolana* is cultivated in the Makiling Botanic Gardens at the University of the Philippines—Los Baños.

Edwino S. Fernando, Member
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In order to maintain an effective SSC communications network, we need your submissions and updates for *Species*. Submissions for *Species* 34 are due May 31, 2000. Submissions should be addressed to:

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